IBM Tealeaf cxReveal
Version 9 Release 0.1
December 4, 2014

cxReveal Administration Manual

Note
Before using this information and the product it supports, read the information in "Notices" on page 95.

This edition applies to version 9, release 0, modification 0 of IBM Tealeaf cxReveal and to all subsequent releases and modifications until otherwise indicated in new editions.

© Copyright IBM Corporation 1999, 2014.
US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

Contents

cxReveal Administration Manual v

Chapter 1. cxReveal Administration Overview 1
Prerequisites 1
How cxReveal Works 1
Components 1
Portal Components 2
Pipeline Components 2
Installation of Components 3
Session Search 4
Portal Search 4
Database Search 4
Replay 4
Browser Based Replay 5
RealiTea Viewer 5
Reporting 5
cxReveal Users 5
System Activity 5
cxReveal Features. 6
Integration with Third-Party CRM Systems 6
Next Steps 6

Chapter 2. cxReveal Installation 7
Pre-Requisites 7
Deployment Models 7
On Report Server (very low volume only) . . . 8
Single Dedicated cxReveal Server 8
Multiple Dedicated cxReveal Servers 8
cxReveal Installation. 8
1. Verify Requirements 8
2. Install CX 9
3. Run cxReveal Installer on the Portal. 9
4. Install cxReveal on the cxReveal Server . . . 10
5. Install Search Database. 10
7. Verify Operations 12
Running the cxReveal Installer 13
Configuration 14
Configure Pipeline 14
Configure cxReveal in the Portal 14
Upgrading cxReveal 14
Uninstall cxReveal 14

Chapter 3. Initial cxReveal Configuration 15
Pre-Requisites 15
cxReveal Settings 15
cxReveal Search 15
cxReveal Users 16
Configure Search Templates and Session List Templates 17
cxReveal User Administration 17
Configuring cxReveal Users and Groups. . . . 17
Test a cxReveal User Account 19
Review cxReveal Dashboard. 19
Configuring cxReveal Database. 19
Configuring Session Attribute Search 19
Testing Your Configuration 20
References. 20
Tealeaf Event Bus 20
Event Bus pipeline 21
Workflow 21
Installation 21
Event Bus data 25
Additional event bus configuration information 26

Chapter 4. cxReveal User Administration 33
Users 33
New / Edit 33
Password 35
Force Password Change 36
Clear Password History 36
Assign Groups 36
Manage NT Users 36
View Activity. 36
Delete 36
Groups 36
New / Edit 36
Assign Users 38
Menu Profile 38
Administration Profile. 39
Search Profile. 39
Browser Replay Profile A. 39
Delete 41
Current Users 41
Portal Menu Bar. 41
For cxReveal Groups 41
For Individual cxReveal Users 42

Chapter 5. cxReveal Settings 43
Search 43
Users 45

Chapter 6. Configuring Session Attribute Search. 47
Pre-Requirements 47
Configuration 47
Configuration Steps 47
Get Familiar with the Event Bus 48
Changing Session Attributes. 48
Testing Configuration in the Portal 50
Configure cxReveal Search Templates. 51
Configure Session List Templates 53
Configure Session Attribute Data Capture . . . 56
Managing cxReveal Sessions. 56
Managing session closes 56
cxReveal session timeouts 57
cxReveal search timeouts 57

© Copyright IBM Corp. 1999, 2014

Discarding sessions 57
cxReveal pipeline shutdown 57
Session removal 58
Logging 58
Statistics 58
Testing 58
Troubleshooting 58
Tuning Performance 58
Diagnostics Resources 59
Attribute Indexing Session Agent 59
Pre-Requisites 60
Configuration Workflow 60
Configuring the Event Bus 61
Configuring Attribute Indexing Session Agent . . 63
Testing Capture of Attributes 65
Configuring Search Templates 66
Search Templates 66
Template Search Fields 70
Session List Templates 79
Session List Columns 84
Building Searches via Encoded URL 87

Chapter 7. cxReveal database 91
Filegroups 91
Sizing 91
Reports 91

Chapter 8. IBM Tealeaf documentation and help 93

Notices 95
Trademarks 97
Privacy Policy Considerations 97

cxReveal Administration Manual

The IBM Tealeaf cxImpact Administration Manual describes how to administer the IBM Tealeaf CX system, including user administration, Portal management, component settings, and more. Use the links below to access specific topics in the manual.

© Copyright IBM Corp. 1999, 2014

Chapter 1. cxReveal Administration Overview

IBM Tealeaf cxReveal packages the core IBM Tealeaf cxImpact capabilities of session replay and search into an efficient interface for use in your enterprise's Call Center. Through a modified interface in the Tealeaf® Portal, IBM Tealeaf cxReveal users can search for visitor sessions and replay them through multiple methods. CSRs can then browse the live customer sessions with the customer on the phone for more precise troubleshooting of customer issues, increasing customer satisfaction and ultimately improving customer retention and generating revenue opportunities.

Note: IBM Tealeaf cxReveal is a separately licensable component of the IBM Tealeaf CX system. An installed version of IBM Tealeaf cxImpact is required. please contact your IBM Tealeaf representative.

- CSR activities are surfaced through a series of provided reports and dashboards. See “Reporting” on page 5.

This section provides an overview to IBM Tealeaf cxReveal and its components for Tealeaf administrators.

Prerequisites

Before you begin, you should be familiar with IBM Tealeaf cxImpact and its administration features.

How cxReveal Works

Through the Portal, IBM Tealeaf cxReveal users and administrators log in and are provided a subset of menu options. These available options interact with the core IBM Tealeaf cxImpact application to perform the search, replay, and reporting actions.

The Tealeaf Portal interface allows data analysts, business owners, IT staff, and administrative users to view the status of interactions with your website, with aggregate data reports that display what visitors are doing on your site. Tealeaf users can search the saved visitor sessions and analyze them for common attributes, such as order completion. Individual visitors' sessions can be replayed with the actual data that was sent and received, so a high-fidelity recreation of the visitor's experience can be reviewed.

How IBM Tealeaf cxReveal users locate sessions depends on the IBM Tealeaf cxReveal components that are installed.

- When the core Portal components are installed, IBM Tealeaf cxReveal users can use the same search interface as IBM Tealeaf cxImpact users to locate sessions.
- When the IBM Tealeaf cxReveal pipeline and database components are installed, IBM Tealeaf cxReveal users can use special search templates in the Portal search interface to search the IBM Tealeaf cxReveal database for visitor sessions.

Components

IBM Tealeaf cxReveal provides two methods of searching for sessions:

© Copyright IBM Corp. 1999, 2014

- **Database Search:** On a dedicated workstation, a pipeline can be installed and configured to capture session attribute information from live sessions and insert them into the Search database for immediate access by IBM Tealeaf cxReveal users. Database search is the preferred method for enabling users to access sessions. This method requires additional configuration and installation.

  Note: Tealeaf recommends using the Search database for more immediate and more efficient searches for sessions. Searching for sessions through the Tealeaf Canisters should be reserved for generalized searches that cannot be easily satisfied by session attribute search.
- **Portal Search:** With IBM Tealeaf cxReveal users can use the standard IBM Tealeaf cxImpact search templates to search for sessions. However, Tealeaf recommends preventing IBM Tealeaf cxReveal users from using IBM Tealeaf cxImpact templates.
  - For more information on restricting access to IBM Tealeaf cxImpact search templates and session lists, see Chapter 6, “Configuring Session Attribute Search,” on page 47.

IBM Tealeaf cxReveal consists of the following components:

- **Pipeline Components** (Database Search)
  1. “cxReveal pipeline”
  2. "Attribute Indexing Session Agent" in the *IBM Tealeaf CX Configuration Manual*
  3. “cxReveal database” on page 3
- **Portal Components** (Canister Search)

Portal Components

The IBM Tealeaf cxReveal components of the Portal application are installed as part of the IBM Tealeaf cxImpact installer. These components consist of configuration settings, search templates, and user administration capabilities for IBM Tealeaf cxReveal that are available through the Portal.

Note: IBM Tealeaf cxReveal users can use the Portal components of IBM Tealeaf cxReveal without installing the pipeline components. However, the ability to search the IBM Tealeaf cxReveal database is not available.

Pipeline Components

Components of the cxReveal pipeline and database.

To enable search by session attribute, IBM Tealeaf cxReveal requires a preconfigured pipeline on a dedicated workstation (the **IBM Tealeaf cxReveal server**) to capture session attributes forwarded by the Tealeaf Canisters and a separate database into which the capturing session agent inserts the session attribute information for IBM Tealeaf cxReveal users to search.

Note: Use of the IBM Tealeaf cxReveal pipeline components requires the installation of the Portal components first.

cxReveal pipeline

The IBM Tealeaf cxReveal pipeline is an instance of the Tealeaf Transport Service installed on the IBM Tealeaf cxReveal server. This pipeline contains a minimum set of session agents to capture event hits forwarded through the Event Bus from the

Tealeaf Canisters, extract session and session attribute information contained in them, and insert or update the extracted information into the IBM Tealeaf cxReveal database.

cxReveal database

Captured session attribute information is inserted into a Tealeaf database that is designed to provide rapid access to this information and the related sessions. After the first session attribute is detected and captured in the IBM Tealeaf cxReveal pipeline, the Attribute Indexing Session Agent creates a row record in the current day's table in this SQL Server database containing the session attribute information and all necessary information that is required to locate the session in the source Canister in the Tealeaf environment.

IBM Tealeaf cxReveal manages captured session attribute information independently of IBM Tealeaf cxImpact.

- Session attribute information is retained for 30 days in the database.
- IBM Tealeaf cxReveal expects a Session Close event to indicate that a session has been closed in IBM Tealeaf cxImpact.

Installation of Components

Installation is a multi-step process for each component of IBM Tealeaf cxReveal:

- **Portal Components** - Installed through the IBM Tealeaf cxImpact installer or upgrader.
  - **IBM Tealeaf cxReveal database** - As part of the install or upgrade process, you can also install the IBM Tealeaf cxReveal database.
- **Pipeline Components** - The Windows pipeline for IBM Tealeaf cxReveal is installed through a separate installer initiated on the IBM Tealeaf cxReveal server.

  Note: Installation of the pipeline components requires a dedicated machine for the IBM Tealeaf cxReveal pipeline and the IBM Tealeaf cxReveal database, which requires an installed version of SQL Server. No other Tealeaf components can be installed on this computer.

  Note: Use of the pipeline components requires the Tealeaf Event Bus to send event information to the IBM Tealeaf cxReveal server for capture. The Event Bus is a component of IBM Tealeaf cxConnect for Data Analysis, a separately licensable component of the IBM Tealeaf CX system. For more information, contact your representative.

  1. **IBM Tealeaf cxReveal database** - The IBM Tealeaf cxReveal database may be installed separately through the Tealeaf Database Manager. If you have not done so already, you should install the database prior to installing the IBM Tealeaf cxReveal pipeline components.
  2. **IBM Tealeaf cxReveal pipeline** - The IBM Tealeaf cxReveal pipeline is installed and automatically configured for session attribute capture using the IBM Tealeaf cxReveal installer.

     Note: IBM Tealeaf cxReveal requires a separate license key, which may be obtained through Tealeaf http://support.tealeaf.com.

Session Search

Through the Tealeaf Portal, IBM Tealeaf cxReveal users can search for visitor sessions in either of the following methods:

- Portal Search - Portal search is useful for performing deep forensic searches for matching sessions.
- Database Search - Database search is best utilized for locating visitor sessions using unique and well-maintained session attributes. Additional configuration is required.

Portal Search

IBM Tealeaf cxReveal users can use the same search templates as IBM Tealeaf cxImpact users. However, IBM Tealeaf cxReveal users are limited to five search fields, none of which can be All Text, Text in Request, or Text in Response.
See "cxReveal - Searching for Sessions" in the *IBM Tealeaf cxReveal User Manual*.

Database Search

Using a search template of IBM Tealeaf cxReveal type, IBM Tealeaf cxReveal users can use the familiar IBM Tealeaf cxImpact search interface to query the IBM Tealeaf cxReveal database for visitor sessions using preconfigured session attributes as search criteria. For example, a Tealeaf administrator might define a session attribute to track the visitor login identifier, which can be configured to enable IBM Tealeaf cxReveal users to search for visitor sessions using it.

Database search is much faster than Portal-based search. Sessions are available through database search as soon as the first session attribute marked for recording is detected in the IBM Tealeaf cxReveal pipeline and inserted into the IBM Tealeaf cxReveal database. Sessions are available for search from that point forward.

- Database searches can be configured to use up to 5 session attributes that are marked for recording. These session attributes must be specified as search fields in a search template of IBM Tealeaf cxReveal type. See Chapter 6, “Configuring Session Attribute Search,” on page 47.
- By default, searching of the IBM Tealeaf cxReveal database is configured to also query the source Canisters in the Tealeaf environment for additional session information. However, there might be performance impacts due to these additional queries. Optionally, you can disable the additional querying to improve performance. See Chapter 6, “Configuring Session Attribute Search,” on page 47.

Replay

IBM Tealeaf cxReveal users can replay sessions using either of the following mechanisms:

- Browser Based Replay - Portal-based replay feature requires no additional installation.
- RealiTea Viewer - This standalone client application enables replay from the Windows desktop. It requires a separate installation onto the desktop.

For both methods of replay, the following features are of value to IBM Tealeaf cxReveal users:

- Shadow browse during live customer sessions
- Quickly search and replay any historical customer session.

- Review and insert annotations to categorize a customer's session for future reporting and analysis.
  - Users can search for annotations through the Portal and RTV interfaces.

Browser Based Replay

IBM Tealeaf cxReveal users can experience the sessions of site visitors as they experienced them through a supported desktop browser without additional installation. This method, called Browser-Based Replay, allows users to search and replay through the Tealeaf Portal.

Replay is a powerful tool for understanding the customer experience. When you search for sessions through the Portal, you see a list of sessions matching your search criteria. You can select one of these sessions and start a replay of the session.

During replay, you see the actual web pages served to the visitor, the links the visitor clicked, and the form fields the visitor edited. Also available is the HTTP request data that was sent from the visitor's browser and the actual HTML returned by the web server.

Browser Based Replay can be configured for IBM Tealeaf cxReveal groups and individual users.

- Individual IBM Tealeaf cxReveal users can configure replay options within BBR.

RealiTea Viewer

In addition to the browser user interface for search and replay, Tealeaf also supplies a Windows desktop application called the **IBM Tealeaf CX RealiTea Viewer** (RTV) that you can install on your personal computer. This application includes basic replay and advanced features for configuring playback on the system.

Reporting

IBM Tealeaf cxReveal administrators can be kept abreast of IBM Tealeaf cxReveal users and overall system activity through the Tealeaf Portal.

cxReveal Users

IBM Tealeaf cxReveal user activities can be managed through a convenient dashboard, which identifies search counts, returned results, replays and other information by IBM Tealeaf cxReveal user or group.

System Activity

IBM Tealeaf cxReveal administrators have access to multiple resources for monitoring status of current sessions and system activities.

- The Current® of active sessions in each Canister can be retrieved through the Portal.
- Information on the status of the Tealeaf system can be retrieved for individual Tealeaf components.
- Additional system information is available for IBM Tealeaf cxImpact administrators.

cxReveal Features

You can log in to the IBM Tealeaf Portal, and use the top menu bar to navigate through the Portal. Clicking any menu item opens a drop-down menu.

Integration with Third-Party CRM Systems

IBM Tealeaf cxReveal supports integration with any third-party CRM through either of the following mechanisms:

- **IBM Tealeaf cxReveal URL API.** By specifying query-based URLs, third-party applications can retrieve IBM Tealeaf cxReveal content, including sessions for replay, through the Portal application.
- **IBM Tealeaf cxReveal Web Services API.** Using the Web Services API, developers can integrate session search and replay into a custom application.

Next Steps

To enable database search, additional configuration is required.

Chapter 2. cxReveal Installation

This section describes the requirements and steps to install IBM Tealeaf cxReveal, its database, and its pipeline.

- For more information on upgrading, see “Upgrading cxReveal” on page 14.

Pre-Requisites

- **Dedicated machine:** Except in very low volume environments, IBM Tealeaf cxReveal database and pipeline requires a dedicated workstation for capturing and storing session attributes.
  - IBM Tealeaf cxReveal supports multiple deployment models. See “Deployment Models.”
- **SQL Server:** The IBM Tealeaf cxReveal machine requires an installation of SQL Server for the IBM Tealeaf cxReveal database.
  - Except in very low-volume environments, this installation should not be shared with any other databases.
  - Before you begin, you should install and configure SQL Server on this system. See "Tealeaf Databases Guide" in the *IBM Tealeaf Databases Guide*.
- **Network Ports:** Configure your firewall settings to allow bidirectional communication through the following port numbers.

  Note: The following table assumes that IBM Tealeaf is installed and configured to use default port numbers. For more information about the default network settings for IBM Tealeaf, see "Network Environment" in the *Tealeaf CX Installation Manual* for more information.

Table 1. cxReveal port requirements

Port number	Description
80	This port is used to communicate with the Portal Server. See "Network Environment" in the *Tealeaf CX Installation Manual* for more information.
1433	This port is used to communicate with the reporting database on the remote SQL server.
1639	This port is used by the Tealeaf Event Bus to communicate with the canister. See "Tealeaf Event Bus" in the *IBM Tealeaf cxConnect for Data Analysis Administration Manual* for more information.
1966 or 1967	This port is used to communicate with the pipeline. See "Network Environment" in the *Tealeaf CX Installation Manual* for more information.
1971	This port is used for TCP communication.

Deployment Models

The IBM Tealeaf cxReveal pipeline and database are supported in the following deployment models.

- On Report Server (very low volume only)
- Single Dedicated cxReveal Server
- Multiple Dedicated cxReveal Servers

© Copyright IBM Corp. 1999, 2014

On Report Server (very low volume only)

For web applications that average no more than 30 pages/second, you might be able to successfully deploy the IBM Tealeaf cxReveal Server and database on the same machine that hosts the Report Server.

Note: Before you deploy to the Report Server, review the volume of your web application traffic and performance characteristics of the Report Server machine with IBM Tealeaf. For more information, contact IBM Tealeaf Professional Services.

Single Dedicated cxReveal Server

For low- to medium-volume sites, the Event Bus on one or more Canisters can be configured to feed session attribute data to a separate, dedicated server, whose sole function is to capture session attributes in the IBM Tealeaf cxReveal pipeline and to insert the data into the SQL Server database instance on the same machine.

Note: If you have deployed more than 3 Canisters in your Tealeaf environment, you may overwhelm the IBM Tealeaf cxReveal Server's ability to capture and process session attribute information. Additional IBM Tealeaf cxReveal Servers may be required.

Multiple Dedicated cxReveal Servers

For larger volume sites with 4 or more Canisters, you might need to deploy the IBM Tealeaf cxReveal database across multiple dedicated IBM Tealeaf cxReveal Servers. In this deployment model, groups of approximately three Canisters feed each dedicated IBM Tealeaf cxReveal Server through the Event Bus.

- Associated with each IBM Tealeaf cxReveal Server is typically a dedicated SQL Server instance hosting the IBM Tealeaf cxReveal database.

Additional IBM Tealeaf cxReveal Servers are installed on separate machines. The Event Bus on the other Canisters is configured to feed these additional servers, which have dedicated IBM Tealeaf cxReveal pipelines and IBM Tealeaf cxReveal database instances.

- Each SQL Server database contains unique data; data is not mirrored across instances.

Through the Portal Management page, you define each additional IBM Tealeaf cxReveal Server, which enables the Portal to manage searches across the multiple instances of IBM Tealeaf cxReveal database.

cxReveal Installation

To install IBM Tealeaf cxReveal on a server, complete the following steps.

For more information on downloading IBM Tealeaf, see IBM® Passport Advantage Online.

1. Verify Requirements

Before you install IBM Tealeaf cxImpact or IBM Tealeaf cxReveal, you need to verify that all machines, including the IBM Tealeaf cxReveal machine, meet the minimum system requirements.

Note: The IBM Tealeaf cxReveal installer assumes that it is installing onto a dedicated machine. If you are installing the Search database and IBM Tealeaf

cxReveal pipeline onto a machine that already hosts a Tealeaf pipeline, the IBM Tealeaf cxReveal installer overwrites the existing default pipeline. Before begin installation of IBM Tealeaf cxReveal, you need to copy the current default pipeline on the hosting machine.

2. Install CX

Before you can install any IBM Tealeaf cxReveal components, you must complete the installation of IBM Tealeaf CX.

Note: As part of your IBM Tealeaf CX installation, you must install the System database. This database contains information that is required as part of the installation of IBM Tealeaf cxReveal. Retain the hostname of the server that hosts the System database for use during the installation of the Search database.

Enabling the Tealeaf Canister Event Bus

After Tealeaf CX is installed and before you install cxReveal, enable the event bus for the Tealeaf Canister.

To enable the event bus:

1. From the Tealeaf Portal, select **Tealeaf** > **TMS**.
2. Select the Servers view from the pull-down list that is displayed.
3. Expand the canister component that you want to edit by clicking + next to the canister.
4. Click **Canister configuration** to display the configuration information for the canister.
5. LocateConfig Actions and click **View/Edit**.
6. After the Tealeaf Canister Config screen is displayed, click the **Services Perform** tab.
7. Select **Enable Event Bus** and click **Save** to enable the event bus and save the configuration to the canister.

After the event bus for the Tealeaf Canister is enabled, you can continue installing cxReveal.

3. Run cxReveal Installer on the Portal

Note: Before you run the cxReveal installer, enable the event bus for the Tealeaf Canister. For more information about enabling the event bus, see "Enabling the Tealeaf Canister Event Bus."

If you are installing the IBM Tealeaf cxReveal search features on a dedicated server other than the Portal, you must enable IBM Tealeaf cxReveal within the Portal. To enable IBM Tealeaf cxReveal, you must run the IBM Tealeaf cxReveal installer on the Portal.

Note: When running the IBM Tealeaf cxReveal installer on the Portal in an environment with a dedicated IBM Tealeaf cxReveal server, you must select to enable IBM Tealeaf cxReveal only. Do not install the IBM Tealeaf cxReveal software on the Portal server if it also resides on a different server.

Note: You might need to provide the name of the server that you have selected to host the IBM Tealeaf cxReveal database. This database does not need to be installed at this time.

Except in very low volume sites, installation of IBM Tealeaf cxReveal pipeline and database on the Portal Server, which is typically the same machine as the Report Server, is not supported.

Note: When installing the IBM Tealeaf cxReveal database on a SQL Server instance by itself, All Databases mode is not available in the Tealeaf Database Manager.

4. Install cxReveal on the cxReveal Server

After you install IBM Tealeaf cxReveal on the Portal machine, you can install on the IBM Tealeaf cxReveal machine. This process installs the dedicated pipeline and session agent required to capture session attribute information and to insert it into the IBM Tealeaf cxReveal database, which is installed later.

Note: If you have not done so already, the target directory for the Search database must be created on the machine that hosts it.

Note: When installing the IBM Tealeaf cxReveal database on a SQL Server instance by itself, All Databases mode is not available in the Tealeaf Database Manager.

5. Install Search Database

If you have not done so already, you should install the IBM Tealeaf cxReveal database through the Tealeaf Database Manager.

Note: This step is necessary only if you are installing the Search database. If you are not installing the Search database, please skip to the next section.

1. Navigate to the following directory on the IBM Tealeaf cxReveal Server:
   `<Tealeaf_install_directory>\Reporting`
2. Double-click `TealeafDatabaseManager.exe`.
3. At the Connect to Tealeaf Databases screen, enter the connection information that is required to connect the Tealeaf Database Manager to the instance of SQL Server where the Search database is to be installed.
   - See "Tealeaf Database Manager Reference" in the *IBM Tealeaf Databases Guide*.

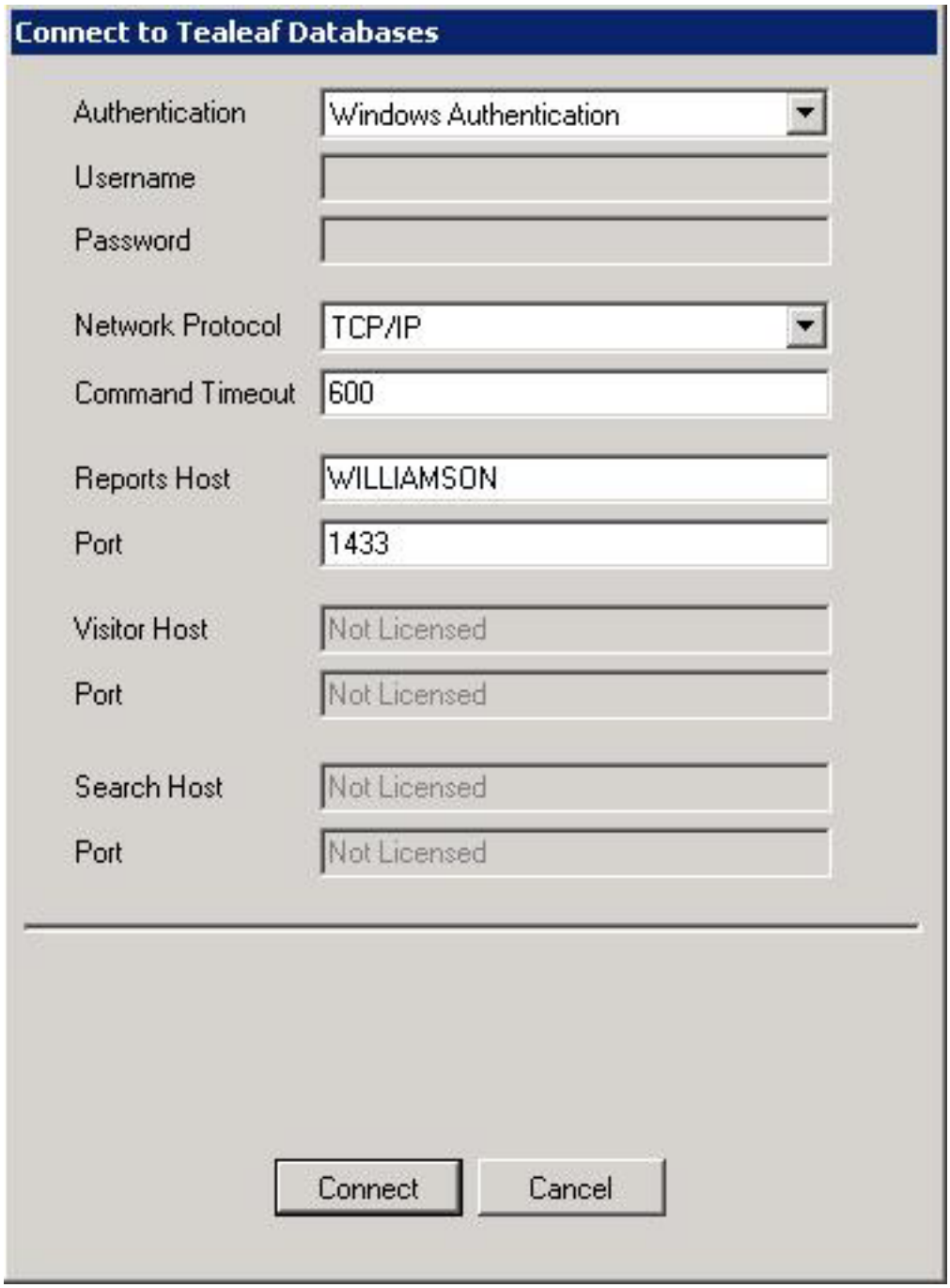


Figure 1. IBM Tealeaf cxReveal Install - Connect

4. The Tealeaf Database Manager loads. From the menu, select **Mode** > **Database Setup** > **Single Database Mode**.
5. The Tealeaf Database Manager is now configured to install individual databases.
6. Before you continue, you should verify that Tealeaf Database Manager is aware of the `System` database. From the Database drop-down, select `System` if it is not already selected. If the database is already installed, then the `Upgrade` option for the Action on the `System` database should be available.

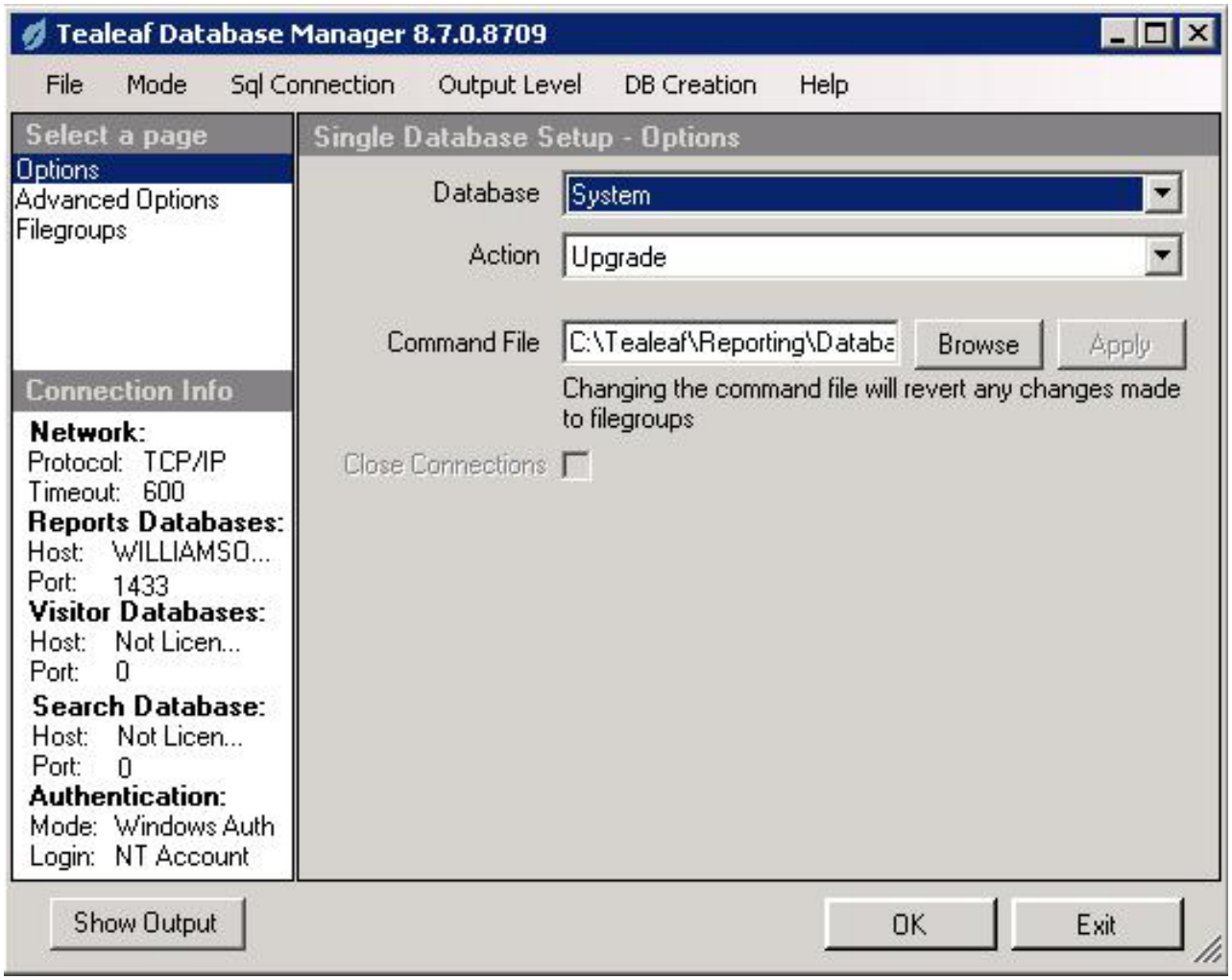


Figure 2. IBM Tealeaf cxReveal Install - Single Database Mode

7. If the `System` database is installed and IBM Tealeaf cxReveal components are installed on the local machine, select `Search` from the Database drop-down.
8. For the Action, select `Install`.
9. To begin the installation, click **OK**.
10. When the installation completes, check the Failed Statements pane for errors.
    - See "Tealeaf Database Manager Reference" in the *IBM Tealeaf Databases Guide*.

- For more information on using the Tealeaf Database Manager to install databases, see "Installing Tealeaf Databases" in the *IBM Tealeaf Databases Guide*.
- See "cxReveal Database" in the *IBM Tealeaf Databases Guide*.

7. Verify Operations

To test for the installation of the IBM Tealeaf cxReveal through the Portal, complete the following steps.

1. Log in to the Portal as an administrator.
2. From the Portal menu, select **Tealeaf** > **Portal Management**.

3. In the left navigation panel, there should be an entry for **IBM Tealeaf cxReveal Settings**. If this entry is present, then IBM Tealeaf cxReveal have been successfully installed.
   - See "cxReveal Settings" in the *IBM Tealeaf cxReveal Administration Manual*.
4. If IBM Tealeaf cxReveal is installed on a dedicated machine that is separate from the Portal Server:
   a. Click **Manage Servers**.
   b. Verify that there is an entry for the IBM Tealeaf cxReveal Server.
      - If not, create an entry for the IBM Tealeaf cxReveal Server onto which you installed the software. See "Managing Tealeaf Servers" in the *IBM Tealeaf cxImpact Administration Manual*.
5. Verification of the database installation and access to the database are part of the configuration steps.
   - See “Configuration” on page 14.

Running the cxReveal Installer

Complete the following steps to install IBM Tealeaf cxReveal components on a machine.

Note: If you are installing IBM Tealeaf cxReveal on a dedicated machine, run the installer for the first time on the machine that hosts the Portal Server. Afterwards, the installer on the dedicated IBM Tealeaf cxReveal machine.

You can skip this section if you have already installed IBM Tealeaf cxReveal.

Note: Before you run the cxReveal installer, enable the event bus for the Tealeaf Canister. For more information about enabling the event bus, see “Enabling the Tealeaf Canister Event Bus” on page 9.

1. In the software distribution, navigate to the folder `Enablers\cxReveal`. Double-click `setup.exe` to start the installation.
2. Select the language that you want to use for the installation screens and click **OK**.
3. From the Welcome screen, click **Next** to proceed to the License screen.
4. In the License screen, review the license terms and click **I accept the terms**; then, click **Next** to continue.
5. From the Reveal Database Information screen, complete the following steps:
   a. Enter the location where the IBM TealeafcxReveal Search database is installed or will be installed.
   b. If the database server is stored on a machine other than the local one, select **Remote Computer** and enter the required settings for the remote database server. For more information on which values to enter, contact your Database Administrator.
   c. Click **Next** to continue.
6. From the System Database Information screen, complete the following steps:
   a. Enter the location where the Tealeaf `System` database has been installed. For more information on which values to enter, contact your Database Administrator.
   b. Click **Next**.
7. From the Install screen, click **Install** to start the installation process.
8. When the Installation Complete screen appears, click **Finish**.

Note: If you are installing the IBM Tealeaf cxReveal database, you must install it separately after you have installed the software. See "5. Install Search Database" on page 10.

Configuration

After you install the search database and the IBM Tealeaf cxReveal pipeline, you must perform additional configuration within the Portal.

Configure Pipeline

As part of the installation of IBM Tealeaf cxReveal, a default pipeline is created to capture session attribute information and insert it into the Search database. You might need to modify this pipeline for your Tealeaf solution.

Configure cxReveal in the Portal

IBM Tealeaf cxReveal enables dedicated user and group accounts in the Portal so you can manage your IBM Tealeaf cxReveal users independently. Additionally, a separate set of configuration settings applies specifically to IBM Tealeaf cxReveal, its users, and the Search database.

Upgrading cxReveal

To upgrade IBM Tealeaf cxReveal, complete the instructions listed below for each IBM Tealeaf cxReveal component.

1. **Portal components:** These components are upgraded using the Upgrader on the Portal machine.
2. Perform any necessary configuration.
3. **Pipeline components:** These components are upgraded using the Upgrader on the IBM Tealeaf cxReveal machine.
4. Perform any necessary configuration.
5. **IBM Tealeaf cxReveal database:** IBM Tealeaf cxReveal uses a dedicated database for storing and updating session attribute data that is captured through an independent pipeline. The Search database can be upgraded through the Tealeaf Database Manager.

Uninstall cxReveal

Note: If you have installed IBM Tealeaf cxReveal on a server that is remote of the Portal Server, then you must remove the server reference from the Portal Management page.

Chapter 3. Initial cxReveal Configuration

IBM Tealeaf cxReveal enables customer call centers to take faster and better action on customer service issues.

Note: This section provides a framework for performing the initial configuration of one component of the IBM Tealeaf CX system in a simplified deployment model. Depending on your Tealeaf solution's deployment, extra configuration might be required. If you have any questions about configuration, contact http://support.tealeaf.com.

IBM Tealeaf cxReveal packages session search and replay from IBM Tealeaf cxImpact into a simple user interface for fast and reliable retrieval of customer experiences with your web application.

Note: IBM Tealeaf cxReveal is a separately licensable component of the IBM Tealeaf CX system. please contact your IBM Tealeaf representative.

This page describes how to perform the initial configuration of IBM Tealeaf cxReveal.

Pre-Requisites

1. It is assumed that all Tealeaf software is installed on Windows and Linux servers. Before you begin, complete all software installation first.
2. Additionally, you should have already performed the initial configuration steps for the IBM Tealeaf cxImpact product components.
3. Determine whether you are using NT authentication to access the Portal. If NT authentication is enabled, you can configure the automatic creation of user accounts when authenticated domain users first contact the Tealeaf Portal. You must configure the global auto-create settings and the auto-create settings for the individual product to which NT users are automatically assigned.
4. The IBM Tealeaf cxReveal database is installed and configured separately.

cxReveal Settings

As part of your initial configuration, you should review the settings that are defined for IBM Tealeaf cxReveal, especially if you are enabling auto-creation of user accounts for authenticated NT users.

1. Log in to the Tealeaf Portal as an administrator.
2. In the Portal menu, select **Tealeaf** > **Portal Management**.
3. In the left navigation bar, click the IBM Tealeaf cxReveal Settings link.
4. You should review the specific settings listed below for the following categories.
   - cxReveal Search“cxReveal Search.”
   - cxReveal Users

cxReveal Search

During initial configuration, you should review the following specific settings for IBM Tealeaf cxReveal Search:

© Copyright IBM Corp. 1999, 2014

Setting Description

BBR Annotation Options
If you are planning to enable your CSRs to add annotations to replayed sessions, you can specify the set of available annotations here.

Default Session List Template
You can specify the default session list template to be applied to all IBM Tealeaf cxReveal users.

Display Event Info Tooltips
When enabled, event information is displayed on mouse-over in the session list templates.

Note: This information might present a security risk. You might want to enable this feature with only a single IBM Tealeaf cxReveal account and testing it before enabling it for all created IBM Tealeaf cxReveal users.

Display Passive Capture Info
When enabled, information about the IBM Tealeaf CX Passive Capture Application and its server is displayed when IBM Tealeaf cxReveal users drill-down into a specific page of a session.

Note: This information might present a security risk. You might want to enable this feature with only a single IBM Tealeaf cxReveal account and testing it before enabling it for all created IBM Tealeaf cxReveal users.

Hit Detail Enabled
When enabled, IBM Tealeaf cxReveal users can drill into the Page Detail page in session data.

Note: This information might present a security risk. You might want to enable this feature with only a single IBM Tealeaf cxReveal account and testing it before enabling it for all created IBM Tealeaf cxReveal users.

Live Max Results Limit
The maximum number of active sessions to return from an active search.

Require At Least One Populated Search Field
When enabled, IBM Tealeaf cxReveal users must populate at least one search field before submitting the search. This feature limits the execution of unnecessarily large searches.

Open Browser Replay in a Featureless Window
Enables the removal of toolbars and buttons from the Browser-Based Replay window, which will force a new window and not a new tab in the browser.

Require At Least One Populated Search Field
When enabled, searches executed through IBM Tealeaf cxReveal must contain at least one populated search field to limit their scope.

Note: If you have installed the IBM Tealeaf cxReveal database, some additional IBM Tealeaf cxReveal settings must be configured.

cxReveal Users

During initial configuration, you should review all of the settings for IBM Tealeaf cxReveal users.

Configure Search Templates and Session List Templates

For optimal search performance, you might need to design specific search templates to be made available to IBM Tealeaf cxReveal users.

A **search template** defines the fields for which a user with access to the template can access. Designing a search template enables you to provide only the necessary search fields while removing from access unnecessary or sensitive fields.

Additionally, you can configure session list templates. When a search is run, the results are displayed in the search results page, which uses a **session list template** to define which fields to display. A session list template can assist CSRs in finding the most relevant information for customer service.

Note: Templates that are used to search for standard session data are of IBM Tealeaf cxImpact type. Templates that are used to search the IBM Tealeaf cxReveal database are of IBM Tealeaf cxReveal type.

- Later in this process, you can specify search templates for individual users and groups and default session list templates for all IBM Tealeaf cxReveal users.

These templates can then be assigned to the IBM Tealeaf cxReveal Admin and IBM Tealeaf cxReveal User groups as needed. You might want to assign different search templates to each group.

cxReveal User Administration

This section describes how to configure and test cxReveal user groups and accounts.

Configuring cxReveal Users and Groups

After application settings have been configured, you can configure IBM Tealeaf cxReveal user and group settings.

- To review the IBM Tealeaf cxReveal users who are currently logged in, click the Current Users link in the left navigation pane of the Portal Management page.

  Note: Since IBM Tealeaf cxReveal often requires many user accounts, if auto-creation of users is enabled, you might need to periodically review the default groups and permissions assigned to these users.

By default, IBM Tealeaf cxReveal users inherit their permissions from their primary group. In defining permissions for IBM Tealeaf cxReveal users, you should first assign them at the group level and then make adjustments for individual users.

When IBM Tealeaf cxReveal is installed, two user groups are automatically created, each of which has one user:

Table 2. Configuring cxReveal Users and Groups

Group	Description	First User
`cxReveal Admin`	IBM Tealeaf cxReveal administrators	`REVEALADMIN` - default IBM Tealeaf cxReveal administrator account.
`cxReveal User`	IBM Tealeaf cxReveal users	`CSR` - default IBM Tealeaf cxReveal user account.

Initially, these two groups have the same permissions, except for the default start page and the admin group's ability to manage user accounts and groups.

- IBM Tealeaf cxReveal Admin users start on the Portal Management page by default, while IBM Tealeaf cxReveal Users start on the default search template page.

For each group, you should review the following settings at a minimum:

Setting Description

`Default Password Expiration`
The number of days that a password is allowed to be used before all members of the group must choose a new one.

`Password Expiration Warning Period`
The number of days before password expiration that a user begins to receive Portal warning messages to change it before it expires.

`Default Log User Out If Idle`
If set to `Enable`, members of this group are automatically logged out of the Portal if their accounts are idle for a specified period of time.

- You can change the idle timeout setting.

`Default Portal Navigation Menu`
If set to `Disable`, members of this group cannot see the top-level Portal navigation menu and can access only Portal pages available through their defined default page.

`Default Lock Replay Mode`
If set to `Disable`, members of this group cannot change their `Replay Mode`.

`Default Replay Mode`
Defines the replay mode for the group. If members of this group are not provided the IBM Tealeaf CX RealiTea Viewer application, set this value to `BBR`, which is a web-based replay application.

`Default Search Template`
You can select the default search template to display to members of this group from the drop-down.

Additionally, you should review the options available by selecting each of the following buttons at the top of the settings pane:

- **Assign Users** - To assign a user to the selected group, click the Assigned checkbox and click **Save**.
- **Menu Profile** - Make selections in the menu tree to define the pages to which members of this group can access. The default settings for IBM Tealeaf cxReveal groups should provide adequate access.

  Note: By default, the IBM Tealeaf cxReveal Admin group has additional menu permissions to see monitoring reports, such as Activity Reports and Active Status, which can be used to verify system status and to diagnose problems reported by user group members.
- **Administration Profile** - You can select the areas of the Portal Management page to which the group members have access.

  Note: The group must have the Portal Management page in its menu profile. Access to these areas should be reserved for administrator groups.

- **Search Profile** - The Search Profile defines the options available to the members of this group on the Search page, as well as the specific search templates that they can access.
- **Browser Replay Profile** - For groups with access to Browser-Based Replay, this profile controls the actions and permissions available to group members when using BBR.

After you have configured group-level settings, you can make adjustments to individual user accounts. To see the user settings, click the Users link in the left navigation pane under IBM Tealeaf cxReveal User Administration.

Test a cxReveal User Account

After user and group settings have been configured, you should create a sample user for each group and test menu access, its default search template, and replay features.

Review cxReveal Dashboard

IBM Tealeaf cxReveal includes a dashboard, which provides updated information on searches and replays that are executed by IBM Tealeaf cxReveal users.

At initial startup, this dashboard is pre-configured to aggregate IBM Tealeaf cxReveal user search and replay data into a convenient and well-organized dashboard.

Before you allow users to access IBM Tealeaf cxReveal, you might want to review the configuration of this dashboard.

Configuring cxReveal Database

The IBM Tealeaf cxReveal database can be installed and deployed to capture session attribute information as soon as it is detected.

Through this database, IBM Tealeaf cxReveal users can access the sessions in which the attributes are contained as soon as they are detected.

Note: Using a separate installer, the IBM Tealeaf cxReveal database is installed on a dedicated instance of SQL Server on a separate machine where a IBM Tealeaf cxReveal pipeline is deployed to capture attribute information.

Configuring Session Attribute Search

After the IBM Tealeaf cxReveal database and pipeline are installed, additional configuration is required.

Configuring the Event Bus

To deliver session attribute information from your Tealeaf Canisters to the IBM Tealeaf cxReveal server for processing, you must enable and configure the Tealeaf Event Bus.

Note: The Event Bus is a component of IBM Tealeaf cxConnect for Data Analysis, a separately licensable product. please contact your IBM Tealeaf representative.

Configuring cxReveal type search templates

Search templates that are used to search the IBM Tealeaf cxReveal database require that you use a separate type of template from IBM Tealeaf cxImpact search templates.

Testing Your Configuration

After your initial configuration is complete, you can perform the following steps to verify the configuration.

For IBM Tealeaf cxReveal, the key configuration item is to verify that users have appropriate permissions to access the IBM Tealeaf cxReveal functionality required for their role. Please complete the following steps to verify access.

- A complete set of tests can be run after all Tealeaf components are configured.

1. **Test `REVEALADMIN` account:** Log in using this account.
   a. Check that the account can access the appropriate menu items.
   b. Verify that the account can access the IBM Tealeaf cxReveal Executive Dashboard through the Dashboards menu. Verify that the IBM Tealeaf cxReveal Executive Dashboard contains all of the appropriate dashboard components.
   c. Perform a search using this account.
      1) Verify that the appropriate search and session list templates are displayed.
   d. Verify that you can create new IBM Tealeaf cxReveal users and groups with this account.
      1) Verify that you can retrieve results from searching.
         - Test the database-based search.
         - Test the Canister-based search.
2. **Test `CSR` account:** Log in using this account.
   a. Verify that the appropriate search and session list templates are displayed.
   b. Perform a search using this account.
      - Test the database-based search.
      - Test the Canister-based search.
   c. Verify that you can retrieve results from searching.

When all Tealeaf components are configured, you should complete an end-to-end test.

References

You can use the links at the end of this topic as references.

Tealeaf Event Bus

The Event Bus streams Tealeaf event data from the Short Term Canister, the in-memory database, to a Tealeaf pipeline. The pipeline can then deliver the event data to any system configured to receive it. The ability to send the event data as a stream in real time makes the event bus useful for integrating with real-time systems.

- The Event Bus runs out-of-band and does not affect the core Tealeaf processes.

Note: The Tealeaf Event Bus is a component of IBM Tealeaf cxConnect for Data Analysis, a separately licensable component of the IBM Tealeaf CX platform. please contact your IBM Tealeaf representative.

Complex Event Processing (CEP) engines can receive the Tealeaf event bus data as a stream and run computations on the data to observe patterns and sequences on the data outside of the current Tealeaf event infrastructure. The event bus data can be correlated against other enterprise data to create new and insightful correlations.

Note: The Tealeaf Event Bus is a high-performance pipeline and should be limited to only session agents required to complete processing. Typically, these pipeline configurations are limited to either of the following:

- `DecoupleEx session agent > Complex Event Processing engine`
- `DecoupleEx session agent > Socket session agent`

  If more processing is required on the Event Bus data, it should be forwarded to another pipeline, which by definition runs out-of-band of the Tealeaf Event Bus.

Event Bus pipeline

The default Event Bus pipeline has the following active session agents:

- DecoupleEx
- Null

The Null session agent ends delivery of event data. Nothing happens until an appropriate destination is enabled in the pipeline.

The configuration file is `TeaLeafEventBus.cfg` and is in the Tealeaf installation directory (`<Installed drive>\TeaLeaf`). You can modify this file as needed to send the event bus data to the appropriate session agent for further processing and transmission of the data to a receiving system.

Note: The preferred method of configuring the Event Bus is through the Tealeaf Management System.

Workflow

To deliver Tealeaf events to an external complex event processing engine, complete the following steps:

Steps:

1. Verify installation of the required components.
2. Enable the pipeline.
3. Configure the pipeline.
4. Test the pipeline locally.
5. If the Event Bus pipeline is working properly, you can stop the pipeline with the appropriate session agent and location.

Installation

The Tealeaf Event Bus is a separately configurable component of IBM Tealeaf cxConnect for Data Analysis.

To install the Tealeaf Event Bus:

1. In your Tealeaf software distribution, navigate to the following directory:

cxConnect\Event Bus

2. Copy all files in this directory to the Tealeaf installation directory on the server where IBM Tealeaf cxConnect for Data Analysis is installed. These files include the following:
   - `CEPCustomFields.cfg` - configuration file for custom Event Bus fields. See "Tealeaf Event Bus" on page 20.
   - `TeaLeaf.Pipeline.CEP.dll` - core Event Bus processing
   - `Tealeaf EventBus.doc` - documentation for Event Bus
   - `TeaLeafEventBus.cfg` - configuration file for core Event Bus

If any of these fields is missing from the Tealeaf installation directory where IBM Tealeaf cxConnect for Data Analysis was installed, check the software distribution. For more information, contact Tealeaf http://support.tealeaf.com.

Enabling the Event Bus

To enable the pipeline, edit the Canister configuration by using Tealeaf Management System (TMS):

1. Log in to the Portal as an admin user.
2. From the **Portal** menu, select **Tealeaf** > **TMS**.
3. In the Servers view, select the wanted server to drill down to components.
4. Open the Canister node to display the configurations.
5. Click the **Canister configuration**.
6. In the Config Actions pane, click **View/Edit**.
7. In the Services Perform tab, select the **Enable Event Bus** check box.
8. Click **Save**.
9. The Canister automatically recognizes the change in configuration and creates the Event Bus pipeline.

View current status of the Event Bus pipeline:

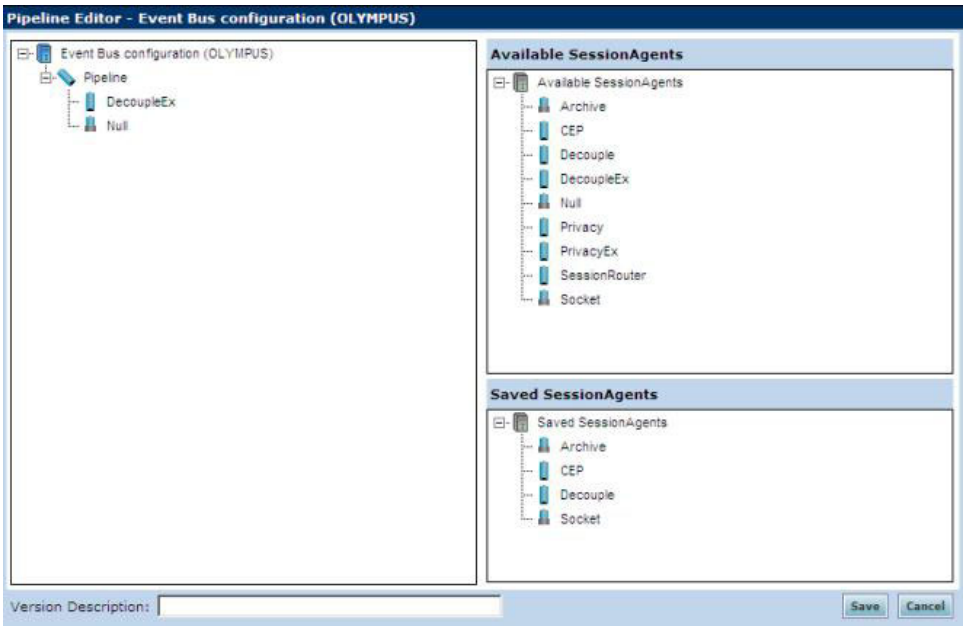
After you enabled the Event Bus, you can review the status of the Event Bus pipeline to verify that hits are being delivered to it.

To view the status of the Event Bus pipeline, use the Tealeaf Capture Status utility on the host server or the Pipeline Status tab in TMS.

Configuring Event bus

You can edit details of the Event bus configuration by using the Pipeline Editor.

1. In TMS, open the Canister node to display the configurations.
2. Click **Event bus configuration**.
3. In the Config Actions pane, click **View/Edit**.
4. The Event Bus configuration is displayed in the Pipeline Editor.



5. In the left pane, select the topmost node: Event Bus configuration. Then, click **Edit**.
6. The Event Bus configuration is displayed:

   Setting Description

   `Application Name`
   For the Event Bus, set this value to `TeaLeafEventBus`.

   `VM Free Disable Threshold`
   The threshold percentage of free virtual memory below which the pipeline automatically shuts down. To disable this check, set this value to `0`.

   `VM Free Enable Threshold`
   After a shutdown, the pipeline restarts when the percentage of free virtual memory exceeds this value. This value should be greater than the value set for `VM Free Disable Threshold`, even if that value is set to `0`.

   `Restart Interval`
   The interval in seconds at which the pipeline checks to see if a restart is necessary.

   `Restart Reset Interval`
   The period in seconds over which the pipeline can attempt restarts.

Changing timestamps:

If necessary, you can change the timestamp format that is recorded for requests in the events sent to the Event Bus, by using the Tealeaf Portal.

By default, time values in the request are written into the `[timestamp]` section of the request in a familiar format. For example:

```
[timestamp]
RequestTimeEx=2011-06-28T04:20:35.074529Z
RequestEndTimeEx=2011-06-28T04:20:35.074529Z
```

If needed, you can change the timestamp format that is recorded for requests in the events sent to the Event Bus to use UNIX ticks.

Note: This timestamp format change applies only to HTTP output for CEP.

Note: The change applies only to the `RequestTimeEx` timestamp in the hit request, if it is included in the `[HTTPFields]` section in the `CustomFields.cfg` file.

Complete the following steps to enable this configuration change.

- The `[CEP]` section of the request has a DateTime name-value pair that is in seconds since 1970 format at a resolution of one second. This event timing entry is not affected by this configuration change.

Note: This change must be applied to each Canister sending events to the Event Bus.

1. Log in to the Portal.
2. From the **Portal** menu, select **Tealeaf** > **TMS**.
3. Click the **WorldView** tab.
4. From the View drop-down, select `Servers`.
5. For each server that hosts a Canister:
   a. Select the server.
   b. Click the **Canister** node.
   c. Click **Event Bus configuration**.
   d. Click **View/Edit Raw**.
   e. Search the configuration for "`[CEP]`". This section contains the raw version of the configuration for the Event Bus on the selected Canister.
   f. Search the `[CEP]` section for `HTTP_PageTimeFormat`.
   g. If the entry does not exist, add the following:
      `HTTP_PageTimeFormat=unix`
      - If the entry is not present, the default Tealeaf time formatting is applied. To switch back to the default, either delete or comment out the line. Or, you can change the `unix` value to `tealeaf`.
   h. Click **Save**.
   i. Add the job to a task. Do not submit.
6. Repeat the above steps to the other Canisters hosting the Event Bus.
7. Submit the task to make the change at the same time for all Event Bus instances.
8. If you did not do so already, insert the `RequestTimeEx` field in the `[HTTPFields]` section in the `CustomFields.cfg` file.

Sending events to the Event Bus

In order for event data to be delivered to the event bus, you must select the `Send to Event Bus` check box in the More Options Step of the event definition in the Tealeaf Event Manager. This check box must be selected for each event that you want to send to the Event Bus.

Testing the Event Bus

To test, you can direct the Event Bus to deliver `.TLA` files to an archive directory.

1. In TMS, open the Canister node to display the configurations.
2. Click **Event bus configuration**.

3. In the Config Actions pane, click **View/Edit**.
4. The Event Bus configuration is displayed in the Pipeline Editor.
5. In the left pane, review the session agents in the Event Bus pipeline. In the default configuration, the terminating session agent is the Null session agent. The terminating session agent defines where pipeline data is delivered after processing by the pipeline. In this case, it is not delivered.
6. From the Available Session Agents pane on the right side of the screen, click and drag the Archive session agent into the pipeline. Drop it just in front of the Null session agent.
7. Drag the Null session agent back to the Available Session Agents pane.
8. The Event Bus pipeline is now terminated at the Archive session agent.
9. Select the **Archive session** agent and click **Edit**.
10. Review the settings.
    - In particular, verify the setting for Archive Directory, which identifies the folder in which the `.TLA` files are delivered from the Event Bus pipeline. This directory is typically the following:

      ```
      C:\TeaLeaf\Archives
      ```
11. Click **OK**.
12. In the Pipeline Editor, click **Save**.
13. In the Update Servers dialog, accept all options and click **Add Tasks and Submit**.
14. The job is submitted to TMS for immediate processing. The job includes a restart of the affected Canister(s).

    You can monitor the progress of the job in the Jobs tab.
15. When the job is completed, sessions containing Event Bus data are delivered in Tealeaf archives to the designated directory. Check the directory for the presence of these files.
16. Select one `.TLA` file and open it in RTV.
17. Open one of the enclosed sessions.

    Note: If you did not include the response in the data sent to the Event Bus, replay view does not display properly.
18. In the RTV toolbar, click the **Request** button. The request of the first page is displayed.
19. Scroll down the request view until you see the `[CEP]` section.
20. If the data is present, then the Event Bus is working properly.
21. You may now configure the Event Bus to deliver hits to the appropriate destination.

Disabling the Event Bus

The Event Bus does not run in the same process space as the Tealeaf Transport Service.

Note: When the Canister Services are shut down for the selected Processing Server, the Event Bus pipeline is ended.

Event Bus data

The Event Bus receives the request data from each page. If a page has multiple events, then the Event Bus receives a single hit.

- The event data is sent to the event bus only if the `Send to Event Bus` option is enabled for an event. See "TEM Events Tab" in the *IBM Tealeaf Event Manager Manual*.
- In addition to the existing request data, an extra section is added to the request.

The response data is available to the Event Bus pipeline.

Note: Because of the unstructured nature of the response data, none of the integration pipeline agents to external systems use the response data.

Event Bus packets

Event Bus packets are sent to the destination system on the following event triggers or conditions:

- Start of Session
  - Contains: hit-based facts
- After Every Hit
  - Contains: hit-based facts
- End of Session
  - Contains:
    1. Fact and event data that is derived from last hit of session
    2. Facts that are marked for reporting on last instance in the session
    3. End of Session trigger evaluation

    Note: Events that are configured to close a session are automatically sent to the Event Bus when it is enabled. The request data in these packets is provided from the last hit of the session.

At the end of a session, an "end of session" signal event is sent to the Event Bus pipeline. The UniqueID of the hit is `-1`.

Additional event bus configuration information

Sample Event Bus request

The following request text is a sample output from the Canister to the Event Bus pipeline:

```
[iamie]
TLTSID=EE67713899435C0572EA592C29F3EFF3
TLTHID=34A9A04D49347BA3DC01B016652A296A
TLTUID=342821467A0B03D336BB8127E6019019
LOADGEN_DATA=TRUE
CaptureSource=TeaLeafPassiveCapture2
CaptureType=1
CaptureVersion=3305

[env]
REMOTE_ADDR=63.194.158.183
REMOTE_PORT=1639
LOCAL_ADDR=63.194.158.210
LOCAL_PORT=80
SERVER_NAME=63.194.158.210
SERVER_PORT=80
HTTPS=off
CONNECTION_ID=11730
PCA_NAME=jupiter
PCA_ADDR=127.0.0.1
PCA_UNAME_RELEASE=2.6.9-55.EL
PCA_UNAME_SYSNAME=Linux
```

```
REQ_BUFFER_ENCODING=UTF-8
REQ_BUFFER_ORIG_ENCODING=ISO-8859-1
REQUEST_METHOD=GET
URL=/store/index.php/foresee
SERVER_PROTOCOL=HTTP/1.1
ResponseType=text/html; charset=UTF-8
StatusCode=200
StatusCodeText=OK
RequestHeaderSize=801
RequestDataSize=0
RequestSize=801
ResponseHeaderSize=428
ResponseDataSize=18404
ResponseSize=18832
RESP_BODY_ENCODING=utf-8
ReqCancelled=False
ReqDiscarded=False
StreamingHit=False
StreamingHitType=0
HTTP_ACCEPT=*/*
HTTP_ACCEPT_LANGUAGE=en-us
HTTP_UA_CPU=x86
HTTP_ACCEPT_ENCODING=gzip, deflate
HTTP_USER_AGENT=Mozilla/4.0 (compatible; MSIE 7.0; Windows NT 5.1;
                .NET CLR 1.1.4322; .NET CLR 2.0.50727; MS-RTC LM 8)
HTTP_HOST=www.straussandplesser.com
HTTP_CONNECTION=Keep-Alive
HTTP_COOKIE=magento=furtlzy7tijjvxcn1pccoc64hs3ew5rk;
   frontend=j5m4cegl15ucj2rrerc4ep8u10;
   TLTHID=8E6A041C52741052026CF311152600F5;
   TLTSID=3B9E220E52741052026485ECEFD4F08A;
   TLTUID=3B9E220E52741052026485ECEFD4F08A;
   __utma=131544653.2442909905711142000.1216148505.1216148505.1216148505.1;
   __utmb=131544653.2.10.1216148505;
   __utmc=131544653;
   __utmz=131544653.1216148505.1.1.utmcsr=(direct)|utmccn=(direct)|
          utmcmd=(none);
   __utmv=131544653.TLTSID%2F3B9E220E52741052026485ECEFD4F08A;
   s_cc=true;
   s_sq=%5B%5BB%5D%5D
HTTP_SET_COOKIE=TLTHID=DC459D6A5277105200D780232AB9484E; Path=/;
                        Domain=.straussandplesser.com
TRANSFER_ENCODING=chunked

[TimeBlock]
WEEK=35
MONTH=8
QUARTER=3
YEAR=2010
HOUR_OF_DAY=10
DAY_OF_WEEK=1
DAY_OF_MONTH=23
DAY_OF_YEAR=235


[timestamp]
RequestTimeEx=2010-08-23T17:27:34.000Z
ResponseStartTimeEx=2010-08-23T17:27:34.019Z
ResponseTimeEx=2010-08-23T17:27:34.019Z
ResponseAckTimeEx=2008-07-15T19:27:44.087781Z
TLapiArrivalTimeEx=2008-07-15T19:27:44.088415Z
ReqTTLB=0
RspTTFB=576964
RspTTLB=17197
RspTTLA=260
ConnSpeed=8630119
ConnType=T1
```

```
WS_Generation=576964
WS_Grade=NormalWS
WS_GradeEx=1
NT_Total=17457
NT_Grade=ExcellentNT
NT_GradeEx=0
RT_Total=594421
RT_Grade=NormalRT
RT_GradeEx=1


[urlfield]

[cookies]
TLTHID=DC459D6A5277105200D780232AB9484E
magento=furtlzy7tijjvxcn1pccoc64hs3ew5rk
frontend=j5m4cegl15ucj2rrerc4ep8u10
TLTHID=8E6A041C52741052026CF311152600F5
TLTSID=3B9E220E52741052026485ECEFD4F08A
TLTUID=3B9E220E52741052026485ECEFD4F08A
__utma=131544653.2442909905711142000.1216148505.1216148505.1216148505.1
__utmb=131544653.2.10.1216148505
__utmc=131544653
__utmz=131544653.1216148505.1.1.utmcsr=(direct)|utmccn=(direct)|utmcmd=(none)
__utmv=131544653.TLTSID/3B9E220E52741052026485ECEFD4F08A
s_cc=true
s_sq=[[B]]
TLT_NumCookies=13



[appdata]
REMOTE_ADDR=63.194.158.183
Request_Method=GET

TLT_URL=/store/index.php/foresee
TLT_SERVER=63.194.158.210
TLT_HOST_NAME=www.straussandplesser.com
TLT_APPLICATION_NAME=store


[ExtendedUserAgent]
TLT_BROWSER=IE
TLT_BROWSER_VERSION=IE7.0
TLT_BROWSER_PLATFORM=WinXP
TLT_TRAFFIC_TYPE=BROWSER
TLT_BROWSER_JAVASCRIPT=true
TLT_BROWSER_COOKIES=true

[TLFID_283]
TLFID=283
TLEventID=57
TLFactValue=EE67713899435C0572EA592C29F3EFF3
TLFactNumericValue=0.0
TLDimGroupID=1
TLDim1=TLT$NULL
TLDim2=TLT$NULL
TLDim3=TLT$NULL
TLDim4=TLT$NULL

[TLFID_284]
TLFID=284
TLEventID=57
TLFactValue=EE67713899435C0572EA592C29F3EFF3
TLFactNumericValue=0.0
TLDimGroupID=3
TLDim1=BROWSER
```

```
TLDim2=TLT$NULL
TLDim3=TLT$NULL
TLDim4=TLT$NULL

[TLFID_285]
TLFID=285
TLEventID=57
TLFactValue=EE67713899435C0572EA592C29F3EFF3
TLFactNumericValue=0.0
TLDimGroupID=5
TLDim1=/store/index.php/foresee
TLDim2=www.straussandplesser.com
TLDim3=store
TLDim4=63.194.158.210

[CEP]
EventBusFormat=8.0
Canister=SIERRA4
SesnIdx=943874
HitNumber=6
DateTime=1282584454
CustomVar1=63.194.158.183
DiscardedSession=false
```

Event Bus request variables: In the above request, the Canister inserts the `[CEP]` section when the Event Bus is enabled. The `[CEP]` request variables are described below:

- The fact data included in the request contains the event and dimension data usable by the destination system.

Variable
Description

`EventBusFormat`
Output format of the Event Bus.

Note: The Event Bus format number is independent of the Tealeaf Release or build number. The Event Bus version can be incremented at any time.

`Canister`
The name of the Canister that generated the Event Bus information

`SesnIdx`
The Canister session index identifier

`HitNumber`
The hit number for the session

`DateTime`
The timestamp in seconds in UNIX time (GMT, number of seconds since 1970)

`CustomVarX`
If one or more session attributes were specified for the session, they and their values are listed in this section.

`DiscardedSession`
If this value is set to `true`, the session `SesnIdx` in `Canister` was marked for discarding.

- This property is used by the IBM Tealeaf cxReveal database, which is populated by `[CEP]` data to maintain session attribute and session state information.

Coral8 Server

To use the Coral8 Server with the Event Bus, you must do the following installation and configuration steps:

1. Install the Coral8 Server product on a server. It is recommended that this server is a different one from the Tealeaf server.
   - For more information, go to http://www.aleri.com.
2. Copy the `Coral8.dll` from the `\Coral8\Server\Sdk\Net` directory on the Coral8 server to the Tealeaf installation directory on the Tealeaf server.
3. Install the Coral8 Studio and load the Tealeaf project file. The project should be initially installed in the Default workspace.
4. Copy the `TeaLeaf.Pipeline.CEP.dll` to the Tealeaf installation directory.
5. Modify the `TeaLeafEventBus.cfg` file. Change the `[DecoupleEx]` DownStreamConfigSection to `CEP`.
6. In the `[CEP]` section, modify the URI value to the correct server address. In most cases, you can change the value `localhost` to the correct server name or IP address.
7. Modify the `CEPCustomFields.cfg` file, if necessary. This modification can be done after the system is running.
8. Through TMS, enable the Event Bus in Canister configuration.
9. Use the Capture Status utility to see the status of the Event Bus.
10. Check the NT Event log for any errors.

The `TeaLeaf.Pipeline.CEP.dll` session agent creates the following log files:

- `SA_CEP_C8_CANISTER_EVENT_YYYYMMDD.log` - This log file outputs all the connection status information. Use this file to diagnose connection problems.
- `SA_CEP_C8_CANISTER_EVENT_STATS_YYYYMMDD.log` - This log file only outputs processing statistics and does not contain any error information.

Coral8 Studio should be used to view the incoming stream data.

TCP connector with delimited message

The TCP connector sends a delimited message to a receiver for each event bus hit. The message is formatted with a delimiter and an optional end-of-record indicator.

- If the text in the message contains the delimiter, then the character is URL-encoded in the string. For example, the comma character (`,`) would be encoded as `%2C`.

The end-of-record indicator can be one of the following values:

- Blank - no value
- `LF` - line feed (`\n`)
- `CRLF` - carriage return with line feed (`\r\n`)

The following is an example of the configuration in the `TeaLeafEventBus.cfg` file:

```
TCP=ON
TCP_Server=localhost
TCP_Port=1971
TCP_Delim=,
# Record Terminator values (CRLF, LF, or blank)
TCP_RecTerminator=LF
```

TCP file schema

The TCP connector uses the default schema.

Log File Connector with delimited data

The Log File Connector sends a delimited message to a log file for each event bus hit. The message is formatted with a delimiter as specified by the configuration.

- If the text in the message contains the delimiter, then the character is URL encoded in the string. For example, the comma character (**,**) would be encoded as `%2C`.
- The line length limit is 10,000 characters, including the delimiters.

  Note: This output connector should be implemented only on a dedicated file server with a Tealeaf pipeline. This connector allows several input sources to write to the same log file at one time and frees up disk I/O from the main Tealeaf system.

Below the `FILE_Directory`, a new directory is created for each day of data with a directory name in `YYYYMMDD` format. The log file names have the following format:

```
TL_EB_0_YYYYMMDD_mmmm.log
```

Where:

- `YYYY` - year
- `MM` - month
- `DD` - day
- `mmmm` - Number of minutes past midnight for current day: 0000 - 1439

These files are structured in the following manner:

```
OutputType=FILE
File Delim: any character or TAB (note: not CSV compliant)
FILE_Delim=|
FILE_Directory=c:\tealeaf\logfiles
Row Time in minutes - log will be rolled every N minutes
FILE_RollTime=5
```

Log File schema

The Log connector uses the default schema.

Chapter 4. cxReveal User Administration

The IBM Tealeaf cxImpact, IBM Tealeaf cxReveal and IBM Tealeaf cxView user administration sections are very similar, but there are differences in the settings for each. The three types of users and groups they manage have very different roles.

To access IBM Tealeaf cxReveal User Administration:

1. Login to the Portal as an administrator.
2. From the Portal menu, select **Tealeaf** > **Portal Management**.
3. The Portal Management page is displayed. In the left panel, click **IBM Tealeaf cxReveal User Administration**.
4. Select the category that applies:
   - Users
   - Groups
   - Current Users

Note: Changes to settings saved in the Portal Management page are not applied to the Portal application until the page is refreshed through your browser.

Note: If you have installed this product as part of a new installation of Tealeaf, access to product features through the Portal are provided to the `ADMIN` group automatically. Automatic access is also granted if you have licensed this product for an existing Tealeaf solution and have not modified your `ADMIN` group permissions since original installation.

- If you have modified the `ADMIN` group and are deploying this product to an existing Tealeaf solution, you must update menu permissions manually for that group.
- For all other users and groups, you must configure the appropriate permissions.

Note: By default, IBM Tealeaf cxReveal accounts created in a new install are assigned to the `cxReveal User` group, since most IBM Tealeaf cxReveal accounts require only this level of access. After the account is created, admin-level permissions can be assigned through this screen to individual accounts. Account assignments and permissions are not altered on upgrade.

Users

Click **Users** to see a list of all IBM Tealeaf cxReveal users.

Select a user and click one of the buttons above the list to make changes.

New / Edit

Click **New** to create a new user, or select an existing user from the list and click **Edit** to open the user properties dialog

Some of the properties can be set to **Primary Group Default**, which means the user inherits the setting from the user's primary group, which is specified in the Primary User Group property.

Setting Description

© Copyright IBM Corp. 1999, 2014

Active If this box is deselected, the user cannot login or receive emails.

ID This system-generated number is used internally to identify the account.

Username
The login name for the user.

Note: Tealeaf recommends using only alphanumeric characters when specifying names used by the Portal application. Some non-alphanumeric characters may be blocked or may cause issues for some Tealeaf components.

NT Username
If NT authentication is in use, this value is the NT/AD user name for the user.

NT Domain
If NT authentication is in use, this value is the NT/AD domain for the user.

Email Enter a valid email address for delivery of results set analysis, scheduled dashboards, alerts, and other Tealeaf content.

Time Zone (used in Search)
Hourly report values are displayed in the user's timezone, but the daily rollup of reporting data is controlled by the system timezone. It is best to set this value to the same as the system timezone to avoid confusion.

- This time zone setting applies primarily to the affected users' search activities. Other Portal activities utilize the Tealeaf system time zone.

System Locale
Select the user's preferred system locale. The system locale setting defines how currency, numeric values, date, and time are formatted are displayed.

This setting defaults to the **Primary Group Default** at the user level. The administrator can manage this setting by selecting a system locale for each user group.

Date Format
Select the format, such as `mm/dd/yyyy`, from the list. The **Date Format** setting defaults to the **Primary Group Default** date. The **Primary Group Default** uses the selected date format setting that is assigned to the user group. If you want to specify a custom system locale for a user, you can configure the **System Locale** setting then, select **Use system locale** for the date format. If you want to use a date format that is unrelated to the system locale setting, you can select a custom date format from the list.

Language
The language the Portal should display for the user.

Password Expires
The number of days after which the Portal does not permit a user from continuing after login until the user has configured a new password.

Start Page
The list of available start pages depends on the user's group and menu permissions.

Portal Navigation Menu
Enables or disables the user's ability to see the top navigation menu in the Portal.

Log User Out If Idle
When enabled, the user is logged out if the session is idle for a period longer than the session timeout length.

- You can change the timeout length through Report configuration.

Allow Report Template Import
When enabled, the user is permitted to import report templates. When set to `Primary Group Default`, the user inherits the default setting for the primary group.

- All users can export report templates regardless of this setting.

Create Combined Session Segment
Enables or disables the Build Combined Segment feature in the Manage Session Segments page for IBM Tealeaf cxReveal users.

Lock Replay Mode
Enables or disables the user's ability to change his or her Replay Mode.

Replay Mode
The following values are available:

- `RTV` - Launch the IBM Tealeaf CX RealiTea Viewer desktop application to replay sessions. The app must be already installed on the user's desktop.
- `Browser` - Replay sessions inside the browser.
- `Prompt on Replay` - Open a dialog in which the user can choose RTV or Browser for every replay.

Default Active Search Template
The default search template to load when the user chooses to search for active sessions.

Default Completed Search Template
The default search template to load when the user chooses to search for completed sessions.

Default All Sessions Search Template
The default search template to load when the user chooses to search for all sessions.

Search Box for Online Help
Enable or disable the Online Help search box available at the top of each Portal page.

Open BBR In A New Window
When enabled, sessions loaded in Browser Based Replay are displayed in a new browser window.

Primary User Group
The primary group to use for group level settings.

Member Of
Lists all groups of which the user is currently a member.

Click **Save** to apply your changes, or click **Cancel** to quit without applying them.

Password

To change a password, select a user and click **Password**. Enter the new user's password twice in the **New Password** and **Confirm New Password** fields. Click **Save** to apply the change.

Force Password Change

To force the user to change his or her password, select a user and click **Force Password Change**. The next time the user logs in, he or she is required to change the account password before using the Portal.

Clear Password History

Reset the user's password history, allowing the user to re-use passwords that might have conflicted with the Portal's password usage policy.

Assign Groups

Select a user and click **Assign Groups** to assign the user to one or more groups. To switch a user's role, remove the user from all groups, and then add a group for the user's new role.

Manage NT Users

When NT authentication is enabled in the Portal, Tealeaf administrators can use this feature to create and disable Portal accounts based on Windows domain logins detected by the Portal.

- NT authentication is enabled through Search Server configuration.
- If desired, you can configure the Portal to automatically login and create accounts for any NT user who visits the Tealeaf Portal.

Left pane: NT users who do not have Portal accounts
Right pane: Current Portal accounts

- To mark an NT user for Portal account creation, select the user, and click the >> arrow.
- To disable a Portal account, select the user, and click the << arrow.
- To save these changes, click **Save**. The marked accounts are created or disabled.

View Activity

This button links to the Audit page, which lists Portal activity for the selected user. For more information see the "Audit page" section.

Delete

Deletes the selected user's profile completely, as well as any dashboards and scorecards created by that user.

Note:

1. When you delete a user account, any scorecard schedules or dashboards created by the user are removed. To avoid this deletion, you may change the password on the user account instead.
2. The Admin user cannot be deleted.

Groups

Under IBM Tealeaf cxReveal User Administration, click **Groups** to display a list of the groups.

New / Edit

Click **New** to create a new group, or select a group from the list and click **Edit** to open the group properties dialog.

User groups have the following properties. All settings except for the Group Name setting can be inherited by users who have the selected group set as their Primary User Group.

Setting Description

ID This system-generated number is used internally to identify the group.

Group Name
The name of the group.

Note: Tealeaf recommends using only alphanumeric characters when specifying names used by the Portal application. Some non-alphanumeric characters may be blocked or may cause issues for some Tealeaf components.

Default Time Zone (used in Search)
Hourly report values are displayed in the user's timezone, but the daily rollup of reporting data is controlled by the system timezone. It is best to set this value to the same as the system timezone to avoid confusion.

- This time zone setting applies primarily to the affected users' search activities. Other Portal activities utilize the Tealeaf system time zone.

Default System Locale
Select your preferred system locale. This setting applies the selected regional formatting to dates, time, and numeric values that are displayed to the user within the Tealeaf Portal.

Default Date Format
Select the format, such as `mm/dd/yyyy`, from the list. By default, the date format is set to the date format of the configured system locale.

Default Language
The language the Portal should display for the user group.

Default Start Page
The list of available start pages depends on the user's group and menu permissions.

Default Password Expiration
This option requires all users to change their passwords every N days. After the password expires, the portal does not let the user continue after login until a new password has been set.

Password Expiration Warning Period
The number of days before password expiration for which the system warns users that their passwords are about to expire.

Default Portal Navigation Menu
Enable or disable the group's ability to see the top navigation menu in the Portal.

Default Log User Out If Idle
When enabled, members of the group are automatically logged out if their sessions are idle for a period longer than the session timeout length.

- You can change the timeout length through Report configuration.

Default Allow Report Template Import
When enabled, this setting allows all users of the group to import report templates by default. This setting can be overridden by settings to individual user accounts.

- By default, admin accounts are configured to allow report import.

- All users can export report templates regardless of this setting.

Default Create Combined Session Segment
Enable or disable the IBM Tealeaf cxReveal group's ability to use the Build Combined Segment feature in the Manage Session Segments page.

Default Lock Replay Mode
Enable or disable the group's ability to change Replay Mode.

Default Replay Mode
The following options are available:

- `RTV` - Launch the IBM Tealeaf CX RealiTea Viewer desktop application to replay sessions. The app must be installed on the local desktops of users in the group.
- `Browser` - Replay sessions inside the browser.
- `Prompt on Replay` - Pop up a dialog to choose RTV or Browser for every replay.

Default Active Search Template
The default search template to load when the members of the group choose to search for active sessions.

Default Completed Search Template
The default search template to load when the members of the group choose to search for completed sessions.

Default All Sessions Search Template
The default search template to load when the members of the group choose to search for all sessions.

Search Box for Online Help
Enable or disable the Online Help search box available at the top of each Portal page for the group.

Open BBR In New Window
When enabled, sessions loaded in Browser Based Replay are displayed in a new window for the group.

Assign Users

Click **Assign Users** to add users to the selected group.

The list is populated with users who are of the correct role (IBM Tealeaf cxImpact, IBM Tealeaf cxView, or IBM Tealeaf cxReveal) and users who are members of absolutely no other groups.

Including users without groups allows you to transition users between roles. To move a user to a new role, remove all group assignments from the user, and then assign the user to another group that matches the new role.

Menu Profile

The Menu Profile for a user group determines the menu options that a group's members can access. It also controls which reports can be viewed on the dashboards of a group's members. For example, if a group does not have permission in the menu profile for Analyze > Report Builder, its members cannot view the Report Builder page or any reports generated by other Tealeaf users.

Note: IBM Tealeaf cxReveal provides a set of menu options that has been reduced from the menu options available to IBM Tealeaf cxImpact users.

Note: After you modify a user group's menu profile, you should verify that the users in the group can still access their default page. This page is defined at the group level in the `Default Start Page` setting and is also available for individual user configuration. Users who cannot access their default page are forced to review their settings.

Administration Profile

For groups granted access to the Portal Management page, the Administration Profile controls the portions of the page that they can see. The items in the list correspond to the sections on the Administration page sidebar.

Search Profile

For groups granted access to the Session Search page, the Search Profile controls the search options members that they can see and the search templates that they are allowed to use. If a user has no search options available, the options section is hidden entirely on the Session Search page.

Browser Replay Profile A

For groups that are granted access to Browser Based Replay (BBR), the Browser Replay Profile controls the actions and permissions to which group members have access while using BBR. The replay and navigation sections of BBR are available to all users, but other functions are controlled by the Browser Replay Profile.

You can configure rules for BBR replay through the Portal Management page.

Browser replay profile B

Setting Description

`View Request`
When selected, users in this group can access BBR Request view.

`View Response`
When selected, users in this group can access BBR Response view.

`View Events`
When selected, users in this group can access the Events pane.

`View URL Fields`
When selected, users in this group can view the URL fields in the left-hand panes.

`View Gen Time`
When selected, the Gen Time statistic is displayed in the page statistics bar.

See "Browser Based Replay Interface" in the *IBM Tealeaf cxImpact User Manual*.

`View Net Trip Time`
When selected, the Net Trip Time statistic is displayed in the page statistics bar.

See "Browser Based Replay Interface" in the *IBM Tealeaf cxImpact User Manual*.

`View Round Trip Time`
When selected, the Round Trip Time statistic is displayed in the page statistics bar.

See "Browser Based Replay Interface" in the *IBM Tealeaf cxImpact User Manual*.

View Bytes
When selected, the size of the response in bytes is displayed in the page statistics bar.

See "Browser Based Replay Interface" in the *IBM Tealeaf cxImpact User Manual*.

View Status Code
When selected, the status code of the response is displayed in the page statistics bar.

See "Browser Based Replay Interface" in the *IBM Tealeaf cxImpact User Manual*.

Actions

Setting Description

Enable Searching
When selected, users in this group can copy text selections and use them to execute searches of completed sessions from within BBR.

Enable Email Sessions
When selected, users in this group can email links to sessions opened in BBR.

Settings

Setting Description

Use Page Titles Instead of URLs
When selected, this option is available in the drop-down menu. When it is selected, the Page Title of each page is listed in the Navigation panel, instead of the URL.

Merge Session Fragments
When selected, this option is available in the drop-down menu. When it is selected, users in this group can configure and execute the merging of session fragments.

Merging session fragments enables the stitching together of fragments of an individual session that has been splintered by timeout, traffic issues, or other factors. The configured behavior can be overridden through the interface.

Report Javascript Errors
When selected, this option is available in the drop-down menu. When it is selected, Javascript errors are reported to the BBR user.

Resize Replay Pane To Match Sessions
When selected, this option is available in the drop-down menu. When it is selected, the replay pane in BBR is automatically resized to match the screen dimensions used by the visitor's user agent.

Advanced Options
Select this option to enable the ability to load Tealeaf archive files into BBR for replay.

Note: TLA files loaded through BBR do not have On-Demand Privacy rules applied to them and may pose a security risk if this feature is enabled.

- Replay rules are applied to loaded TLA files.

Delete

Deletes the selected group. The group's members are not deleted.

Current Users

Displays a list of the currently active users of the specified role. The user's name is a link to the Audit page, which displays the user's activity.

Portal Menu Bar

In many implementations, IBM Tealeaf cxReveal users do not require access to a Portal menu bar, as users' primary functions are searching for sessions and then replaying found sessions. Depending on your user account permissions, you may not be able to see a menu inside the Portal.

If needed, Tealeaf administrators can configure the menu profile for individual IBM Tealeaf cxReveal users or IBM Tealeaf cxReveal user groups to include a menu bar in the Portal.

Note: A user's menu profile is defined as the union of the menu profiles of all user groups to which the user belongs. For example, if the user belongs to two user groups, the menu profiles of each group are applied to the user.

- If a specific permission is enabled for one group and disabled for another group to which the user belongs, then the menu item is enabled.

For cxReveal Groups

To make menu bar changes for IBM Tealeaf cxReveal groups, please complete the following steps.

1. Login to the Portal as an administrator.
2. From the menu, select **Tealeaf** > **Portal Management**.
3. In the left panel, click the IBM Tealeaf cxReveal User Administration link.
4. Click the Groups link.
5. Select the group whose menu profile you'd like to change.
6. From the Default Portal Navigation Menu setting, you may select one of the following options:
   - `Enable` - Enable the Portal menu for this user group.
   - `Disable` - Disable the Portal menu for this user group.
     - IBM Tealeaf cxReveal users in this group are placed in the page specified in the Default Start Page setting. Typically, this value is set to `Default Search Template` for IBM Tealeaf cxReveal users.
7. To configure a menu profile for the group, click **Menu Profile**.
8. In the Menu navigation tree, you can select the menus and menu items to display to members of this group.
9. To save changes, click **Save**.

For Individual cxReveal Users

To make menu bar changes for individual IBM Tealeaf cxReveal users, please complete the following steps.

1. Login to the Portal as an administrator.
2. From the menu, select **Tealeaf** > **Portal Management**.
3. In the left panel, click the IBM Tealeaf cxReveal User Administration link.
4. Click the Users link.
5. Select the user whose menu profile you'd like to enable.
6. Click **Edit**.
7. From the Portal Navigation Menu setting, you may select one of the following options:
   - `Primary Group Default` - This user inherits its menu profile settings from the primary user group configured for the user. This group is listed under the Primary User Group setting for the user account.
   - `Enable` - Enables a menu profile for this individual user.
   - `Disable` - Disables a menu profile for this individual user.
8. To save changes, click **Save**.

Chapter 5. cxReveal Settings

These settings govern the behavior of IBM Tealeaf cxReveal, which is used to search, analyze, and replay visitor sessions.

To accessIBM TealeafcxReveal settings:

1. Login to the Portal as an administrator.
2. From the Portal menu, select **Tealeaf** > **Portal Management**.
3. The Portal Management page is displayed. In the left panel, click **IBM Tealeaf cxReveal Settings**.
4. Select the category that applies.

Note: Changes to settings saved in the Portal Management page are not applied to the Portal application until the page is refreshed through your browser.

Search

cxReveal search settings control how session searches are configured and retrieved. Searches may return a high number of sessions, so some settings can be used to limit the volume of retrieved data.

Table 3. Search

Setting	Description	Default
BBR Annotation Options	Administrators can configure the list of pre-selected annotation options available in Browser-Based Replay. Select this option and scroll down to review and update the list. Users can also create their own annotations through BBR.	N/A
Completed Max Results Limit	Max number of sessions to return for a completed session search.	100
Default Session List Template	The session list template to use for drill-down searches for IBM Tealeaf cxReveal users. • Searches executed from the Portal search page utilize the assigned or selected session list template.	<Default>
Display Event Info Tooltips	Toggle display of tooltips for events.	Enabled
Display Passive Capture Info	Show/hide PCA information when drilling down to a specific page of a session.	Enabled
Event Image Display Max	The maximum number of events to display in the Event List column on the Session List.	20
Event Selector Dimensions	The initial size for the Event Selector.	2x1
Hit Detail Enabled	Enables the Page Detail view in search results (**Session List > Session Detail > Page Detail**).	Enabled
Live Max Results Limit	The maximum number of active sessions to return from an active search.	100

© Copyright IBM Corp. 1999, 2014

Table 3. Search (continued)

Setting	Description	Default
Log Search Database Searches	When enabled, searches of the IBM Tealeaf cxReveal database are logged. • This setting is present only if the IBM Tealeaf cxReveal database has been installed. • The number of days that logs are retained is defined by `Search Database Log - Days Retain`.	`Disabled`
Open Browser Replay In Featureless Window	Enables the removal of toolbars and buttons from the Browser-Based Replay window, which will force a new window and not a new tab in the browser.	`Enabled`
Require At Least One Populated Search Field	When enabled, searches executed through IBM Tealeaf cxReveal must contain at least one populated search field to limit their scope.	`Disabled`
Results Per Page	The page size of the session list grid in search results.	`20`
Search Database Log - Days Retain	When `Log Search Database Searches` is enabled, this setting defines the number of days for which logs of IBM Tealeaf cxReveal database searches are retained. • This setting is present only if the IBM Tealeaf cxReveal database has been installed.	`7`
Search Database Max Sessions Returned	Specifies the maximum number of sessions that can be returned from a database search. • This setting defines the volume of search data returned from the IBM Tealeaf cxReveal Search database. Other settings that limit the number of displayed sessions, such as `Completed Max Results Limit`, may be applied afterward, further limiting the number of search results.	`100`
Search Database Search Timeout (seconds)	This setting defines the maximum amount of time in seconds that a search is permitted to run before it times out. • This setting applies only if you have installed the IBM Tealeaf cxReveal database.	`60`
Search Database Session Attribute Search Tables - Days Retain	Number of days of session attribute data to retain in the IBM Tealeaf cxReveal database tables • This setting applies only if you have installed the IBM Tealeaf cxReveal database.	`30`
Search Database Session Timeout (minutes)	For IBM Tealeaf cxReveal, this setting defines the number of minutes that are permitted to elapse without additional activity, after which the session is automatically timed out. • This setting applies only if you have installed the IBM Tealeaf cxReveal database.	`60`
Session Detail Path Variable	The field to retrieve the URL for each page in session detail.	`env/URL`

Table 3. Search (continued)

Setting	Description	Default
Use Canister Data for Database Search Results	When enabled, searches executed against the IBM Tealeaf cxReveal database to retrieve session attribute information also gather session information from the Canisters where the matching sessions are stored. **Note:** Tealeaf recommends keeping this setting enabled, which is the default configuration. However, if performance degrades significantly for searches against the IBM Tealeaf cxReveal database, you may try disabling this setting.	Enabled

Users

These IBM Tealeaf cxReveal settings control creation of user accounts, password policies, and default user settings.

Table 4. Users

Setting	Description	Default
Automatic User Creation	If NT Auth is enabled, this setting allows for new users to have Portal accounts automatically created on first login.	Enabled
Automatic User Creation Settings Prompt	Enables first-time users to specify their user settings immediately upon login.	Disabled
Login Page Language (Global)	The language used on the global login page. After the user logs in, the user's preferred language is known.	English (US)
Minimum Password Length	Minimum password length for user passwords. Portal passwords can have a maximum length of 32 characters.	3
New User Default Page	The default start page to assign to automatically created users.	Report Builder
New User Default Time Zone (used in search)	The default timezone to assign automatically created users. This setting is used for display in search. By default, this value is set to the Tealeaf system time zone. See "Configuring the System Timezone" in the *IBM Tealeaf CX Configuration Manual*.	System time zone
Previous Password History (Count)	Number of unique passwords a user must have before reusing a password.	Disabled

Table 4. Users (continued)

Setting	Description	Default
Previous Password History (Days)	Number of days that must pass before a user can reuse a password.	Disabled
Require Strong Passwords	Require passwords to meet the 'strong password' requirements.	Disabled
User Default Group	The user group to assign to automatically created users, one for each role: IBM Tealeaf cxImpact, IBM Tealeaf cxReveal, or IBM Tealeaf cxView.	cxReveal User

Chapter 6. Configuring Session Attribute Search

IBM Tealeaf cxReveal provides the ability to search for sessions by session attribute. When configured session attributes are detected in a visitor session, those attributes and other session-related information are inserted into the IBM Tealeaf cxReveal database (TL_SEARCH) where they are immediately available for search. Through session attribute search, IBM Tealeaf cxReveal users can access visitor sessions quickly and immediately after they have been created.

Note: Session attribute search is a component of cxReveal, a separately licensable component of the Tealeaf CX platform. please contact your IBM Tealeaf representative.

This section describes the sequence of steps required to enable, configure, and test searching by session attribute.

Pre-Requirements

Before you begin configuring session attribute search, please verify the following:

- IBM Tealeaf cxReveal has been licensed, and the license key has been enabled.
- Based on your traffic load, you should determine the number of IBM Tealeaf cxReveal servers to deploy in your Tealeaf environment.

  Note: Tealeaf supports the deployment of multiple IBM Tealeaf cxReveal Servers.
- At least one IBM Tealeaf cxReveal machine has been installed and integrated into the network. Machine must meet Tealeaf pipeline and Database Server requirements.
- IBM Tealeaf cxReveal database has been installed on a server hosting a dedicated SQL Server instance.
- Through the IBM Tealeaf cxImpact installer, the IBM Tealeaf cxReveal pipeline has been installed on each IBM Tealeaf cxReveal machine capturing session attribute data.
- Session attribute search requires the Tealeaf Event Bus, a feature of IBM Tealeaf cxConnect for Data Analysis.

  Note: Tealeaf Event Bus is a component of cxConnect for Data Analysis, a separately licensable component of the Tealeaf CX platform. please contact your IBM Tealeaf representative.

Configuration

After the above requirements have been applied to your Tealeaf solution, please complete the following configuration sections in the listed order.

Configuration Steps

In the following sequence, you can review the list of steps required to enable and configure session attribute search, including links to topics within this section.

© Copyright IBM Corp. 1999, 2014

1. **Configure session attributes:** Before you begin using session attribute search, you should verify that you have configured all of the session attributes on which you would like to search.
   - This section also includes some simple tests to verify that the preconfigured session attributes are being populated.
2. **Configure IBM Tealeaf cxReveal session timeout:** By default, IBM Tealeaf cxReveal sessions time out in 60 minutes. You can change this setting.
3. **Configure search templates:** Database search requires a different type of search template and session list template.
   a. Configure cxReveal search templates.
   b. Configure session list templates.
4. **Configure Events:** As part of this configuration, events must be configured to be sent via the Event Bus to the IBM Tealeaf cxReveal Server(s).
5. **Enable and configure IBM Tealeaf cxReveal capture:** Session attribute search requires a dedicated pipeline on a separate machine to capture session attributes for insertion into the IBM Tealeaf cxReveal database.
6. **Enable Event Bus:** On each Processing Server that is submitting sessions for capture to the Search database, the Tealeaf Event Bus must be enabled, deployed, and configured to send session attribute information to the appropriate IBM Tealeaf cxReveal Server.
7. **Testing:** After you have configured the session agent, pipeline, and Portal objects, you can test the capture and database population of session attributes by performing a search of them.

Get Familiar with the Event Bus

Session attribute data is forwarded from the Canisters to the IBM Tealeaf cxReveal server using the Tealeaf Event Bus, a component of IBM Tealeaf cxConnect for Data Analysis.

The Event Bus is used for delivering Tealeaf event information to third-party consumers of the data. IBM Tealeaf cxReveal utilizes this functionality to capture additions or changes to session attribute information, which is automatically tracked in each Canister.

Before you begin, you should familiarize yourself with the Event Bus and how it works.

Note: After the Tealeaf Event Bus has been enabled and configured on each Canister, it should function transparently for IBM Tealeaf cxReveal.

Changing Session Attributes

Through the Event Manager, you can create custom session attributes, which are user-defined variables that persist with the session data.

These variables can be used to store session data detected by events. Some of these attributes can be marked for tracking and searching in the IBM Tealeaf cxReveal database.

Through the Event Manager, you can configure up to 64 custom session attributes.

Any of these attributes may be used as search fields in the IBM Tealeaf cxReveal database.

Note: Session attributes must be marked for recording the values of them in order for them to be usable as search fields in IBM Tealeaf cxReveal.

Defining database search fields through session attributes

Note: Changing a search field to a different session attribute changes the available data and may break existing IBM Tealeaf cxReveal search templates. It is recommended that you configure these search fields and search templates during initial implementation and do not change them.

1. From the Portal menu, select **Configure** > **Event Manager**.
2. Click the Session Attributes tab.
3. The list of available session attributes is displayed. Session attributes are sorted by their display Name by default.
   - To sort the list of session attributes by index number, click the Index column. To reverse the sort order, click it again.
4. To review the definition of any session attribute, double-click it. The Edit Session Attribute window is displayed.
   - The source of the session attribute data is listed next to Populated By.
   - In the session attribute definition, you can define whether the session attribute is tracked or searchable. These settings determine whether the session attribute is available for use in IBM Tealeaf cxReveal database searches.

     Setting Description

     `Tracked in cxReveal DB`
     When this option is selected, the session attribute is tracked in the IBM Tealeaf cxReveal database. Up to 32 session attributes can be tracked in the database at any time. When a session attribute is selected for tracking, data is captured and inserted in to the IBM Tealeaf cxReveal database. Data is not searchable unless you configure it to be searchable in the database using the following setting.

     `Searchable in cxReveal DB`
     When this option is selected, the session attribute is searchable in the IBM Tealeaf cxReveal database using a IBM Tealeaf cxReveal search template. Up to 5 session attributes can be tracked in the database at any time. A searchable session attribute must also be tracked. When a session attribute is selected for searching and tracking, data is captured and inserted in to the IBM Tealeaf cxReveal database, and you may use search templates configured to search for the tracked attribute to locate sessions from that point onward.
5. If you make changes, click **Save Draft** to save them.
6. To commit any changes made to session attributes, click **Save Changes**.

Behaviors when search fields are changed

Immediately after the IBM Tealeaf cxReveal database has been installed, you should configure the session attributes upon which Tealeaf users may search. These five attributes are the primary search fields used for locating sessions through session attribute search.

- IBM Tealeaf cxReveal checks for changes in these fields once per hour.

However, if you must change the session attributes on which IBM Tealeaf cxReveal users search, please review the following behaviors.

Suppose you are changing Search Field 5 to search for SessionAttribute20 instead of SessionAttribute7. The resulting behaviors are as follows:

1. Searches using Search Fields 1 - 4 only are unaffected. You may search for across all available data using these fields.
2. You may not search for SessionAttribute7 anymore through the Portal.
   - The data that has been stored for SessionAttribute7 remains in the database until a trim operation removes it.
3. You may search for SessionAttribute20 across all available dates. However, data is populated for this session attribute only from the time when the search field change was saved and onward.

   Note: Although it is possible to search across all dates for SessionAttribute20, it is important to configure searches for this session attribute only from the point of change and onward. Searches using this attribute against dates from before the point of change are executed, even though there is no data available. Since there are no table indexes available for these searches, they may time out before sessions can be successfully retrieved.
   - For searches specifying an OR operation between search fields including the changed one or searches that use a not like operator on Search Field 5, searches for sessions before the SessionAttribute20 change may return a positive number of results.
   - For searches specifying an AND operation between search fields including the changed one, searches for sessions before the point of change fail to return results from those dates. The exceptions to this failure are if the search uses a not like or not equal operator on Search Field 5; in those two exceptions, results may be returned.

Suppose that after three days, you choose to switch Search Field 5 back to SessionAttribute7. The behaviors are as follows:

- Data is available for SessionAttribute20 for the three days that it was assigned to Search Field 5. However, you cannot search for it anymore.
- Data is available for SessionAttribute7 for all days except the three days, which are now a gap in the database.

Testing Configuration in the Portal

This section describes how to test the session attributes.

Searching for session attributes

If your system is already capturing data, you can perform the following steps to test for the presence and values for each of the above session attributes.

1. Login to the Tealeaf Portal.
2. From the Portal menu, select **Search** > **Completed Sessions**.
3. The Portal Search screen is displayed, and the default completed sessions search template is selected.
   - You may also search for session attributes through the IBM Tealeaf CX RealiTea Viewer.
4. The available fields may contain entries that correspond to SessionAttribute00 - SessionAttribute04.
   - If these search fields are not available, select a different search template for completed sessions. If you cannot find them in any search template, you may add a session attribute field to one of your search templates.
5. Specify a search:

a. Remove all search fields.
b. Add one of the above session attributes to the search fields.
c. Enter a value of `*`.
d. Click **Search**.
e. If results are returned, then the session attribute is specified and being captured.
f. If no results are returned, you may be able to configure the session attribute.

6. Repeat the above search for each of the session attributes to determine if it is configured and captured.

Configure cxReveal Search Templates

You can configure your IBM Tealeaf cxReveal search templates to include any of the five session attributes configured to be searchable.

If you have configured IBM Tealeaf cxReveal to include Canister data to be searchable in the database, you may include some Canister session attributes as search fields in your IBM Tealeaf cxReveal search templates.

As needed, you can make changes to the IBM Tealeaf cxReveal templates to use different fields.

Selecting cxReveal search templates

To select a IBM Tealeaf cxReveal search template to modify, please complete the following steps.

1. In the Portal, select **Configure** > **Search Templates**. The Configure Search Templates screen is displayed.
   - See "Configuring Search Templates" in the *IBM Tealeaf cxImpact Administration Manual*.
2. In the Templates panel, select the type of search template to modify. The available templates for Active, Completed or All Sessions search are displayed.
3. Then, select the IBM Tealeaf cxReveal template. Below, a search template called `cxReveal Active` has been selected.

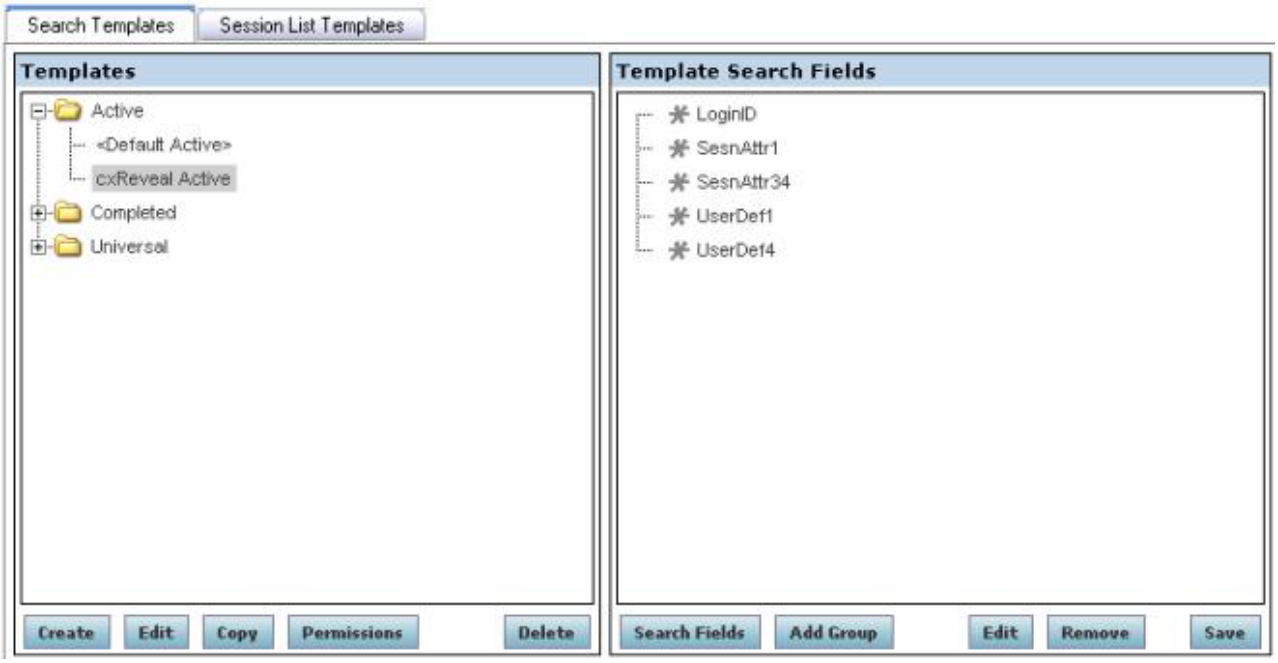


Figure 3. Configuring IBM Tealeaf cxReveal Search Templates

4. The list of fields currently in the search template is displayed on the right side of the screen.
5. You may select any session list template to use with your IBM Tealeaf cxReveal search template. See "Configure Session List Templates" on page 53.

Creating cxReveal search templates

You can create IBM Tealeaf cxReveal search templates from scratch. When you create a new one, you must select `cxReveal` for the template type.

Note: You may only add fields to search templates of IBM Tealeaf cxReveal type that are session attributes configured to be searchable and trackable.

Editing cxReveal search templates

You may add or remove fields to your IBM Tealeaf cxReveal search templates like any other search template.

Note: When adding a IBM Tealeaf cxReveal search field to a search template, you should verify that it is specified with a valid session attribute that is collecting data. Open the search field definition to verify that the session attribute is not listed as `Unknown Attribute`. Such search fields can be added to a search, yet they return zero sessions every time. Each IBM Tealeaf cxReveal search field should be verified independent of other IBM Tealeaf cxReveal search fields.

Configuring the default cxReveal search template

For IBM Tealeaf cxReveal groups, you may configure the default search template to use.

If desired, you may configure the default search template to be one of the search templates that has been created to query the IBM Tealeaf cxReveal database for session attribute information.

IBM Tealeaf cxReveal users may use search templates of IBM Tealeaf cxImpact type or IBM Tealeaf cxReveal type.

Restricting access to cxImpact search templates

Note: Tealeaf recommends using the Search database for more immediate and more efficient searches for sessions. Searching for sessions through the Tealeaf Canisters should be reserved for generalized searches that cannot be easily satisfied by session attribute search.

As part of your implementation of the session attribute search of the Search database, you should restrict access for IBM Tealeaf cxReveal users to only use search templates of IBM Tealeaf cxReveal type. These search templates can only access the Search database and therefore improve search and retrieval of customer sessions in the Call Center.

Steps:
To restrict access, please complete the following steps:

1. Login to the Portal as a Tealeaf administrator.
2. From the Portal menu, select **Configure** > **Search Templates**.
3. For each Active, Completed, and All Sessions search template, do the following:
   a. Select the template. Click **Edit**.
   b. In the Search Type drop-down, check the value. If it is a `cxReveal` search template, click **Cancel**. Skip to the next template.
   c. If it is not a IBM Tealeaf cxReveal template, it is a IBM Tealeaf cxImpact template. IBM Tealeaf cxReveal user groups should not be allowed to use these search templates. Please do the following:
      1) Click **Cancel**.
      2) In the Templates panel, click **Permissions**.
      3) Deselect checkboxes next to the IBM Tealeaf cxReveal user groups. By default, the Portal is installed with two IBM Tealeaf cxReveal user groups: `cxReveal Admin` and `cxReveal User`.
      4) Click **Save**.
      5) Members of the deselected user groups cannot use the search template.
4. Repeat the above steps for each search template.

Configure Session List Templates

You may also configure session list templates for IBM Tealeaf cxReveal use.

A **session list template** is used to display search results returned from queries using search templates. Since IBM Tealeaf cxReveal search templates access a proprietary database, they require their own type of search template.

- If IBM Tealeaf cxReveal is configured to include Canister results in search results returned from the IBM Tealeaf cxReveal database, then any session list template may be used for search results.
- If IBM Tealeaf cxReveal is configured to omit Canister results, then the session list template should be configured to include only search fields available in the IBM Tealeaf cxReveal database.

1. In the Portal, select **Configure** > **Search Templates**.
2. Click the Session List Templates tab.

3. The available session list templates are displayed.

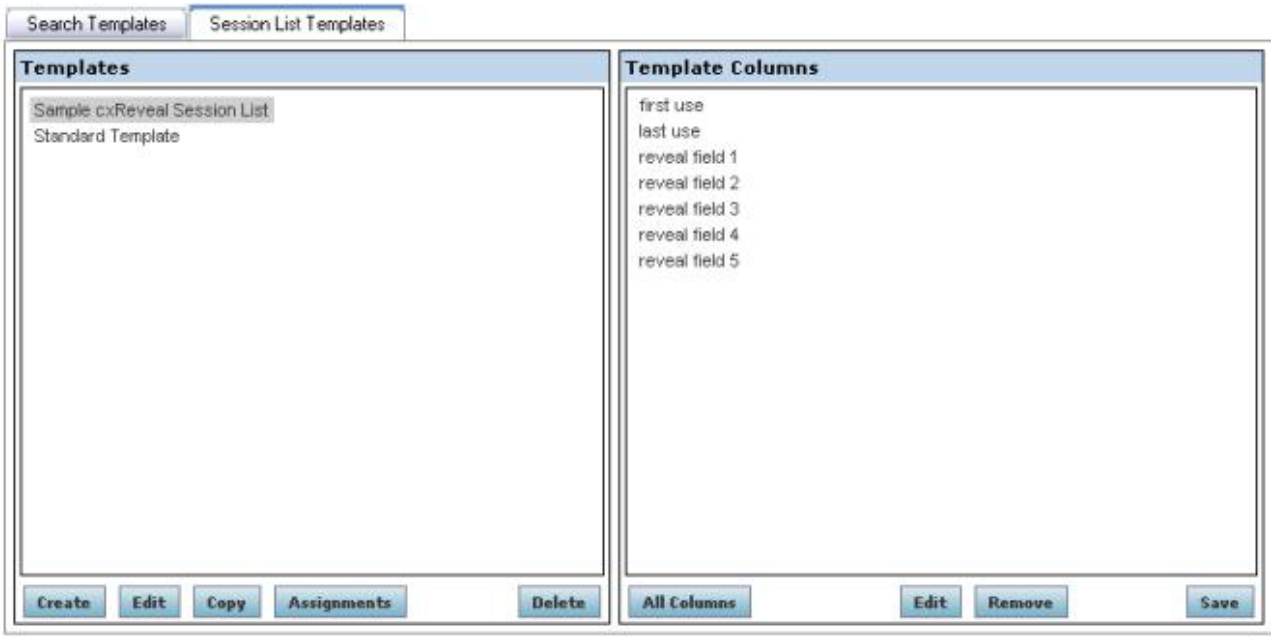


Figure 4. IBM Tealeaf cxReveal Session List Templates

Adding or editing a cxReveal session list template

- To edit a IBM Tealeaf cxReveal session list template, select it and click **Edit**. The properties of the session list template are displayed.

To add an IBM TealeafcxReveal session list template:

1. In the Session List Templates tab, click **Create**.
2. The Session List Template properties window is displayed.
3. To configure a IBM Tealeaf cxReveal session list template, select `cxReveal` from the Type drop-down.
4. Specify the other properties as needed.
   - To enable replay of sessions from the session list template, click the Replay Sessions checkbox.
   - To enable the ability to drill-down on sessions to the list of pages in a session, click the Pages List Drilldown checkbox.

     Note: The ability to Analyze Session Segments and the Server Metrics Table are not available for IBM Tealeaf cxReveal session list templates.
5. To save the template, click **Save**.

Adding or editing columns of a cxReveal session list template

When a IBM Tealeaf cxReveal template has been created or selected, you may edit the columns available in the session list template.

- To see all possible columns for the IBM Tealeaf cxReveal template, click **All Columns**.
  - If IBM Tealeaf cxReveal is configured to include Canister data, then you may also include Canister fields in your session list template.
  - If you add a Canister-based column and IBM Tealeaf cxReveal is not including Canister data, the column is not populated in the session list.

- To edit a column, select it in the right panel and click **Edit**.
- To remove a column from the template, select it and click **Remove**.
- To save your changes, click **Save**.

Configuring a cxReveal session list column:

To configure a column for a IBM Tealeaf cxReveal session list template, please complete the following steps.

Note: IBM Tealeaf cxReveal session list templates may include any trackable fields from the IBM Tealeaf cxReveal database.

1. Create or select the IBM Tealeaf cxReveal session list to contain the column.
   a. To edit one of the columns already in the template, select it in the Template Columns panel and click **Edit**.
   b. To see all columns that have been created for this type of session list template, click **All Columns**. The Configured Session List Template Columns window is displayed.
      1) To edit one of the created columns, select it and click **Edit**.
      2) To create a new column, click **New**.
2. The Configure Session List Column window is displayed. Configure the following properties:
   a. From the Type drop-down, select `cxReveal`.
   b. The available fields are updated for IBM Tealeaf cxReveal types of templates. From the Fields drop-down, select the field to populate the session list template column.
   c. Populate the other fields as needed.
3. To save the session list template column, click **Save**.
4. To add the new column to your session list template, select it in the Configured Session List Columns window and click **Add to Template**.

Available cxReveal session list template columns:

Note: If IBM Tealeaf cxReveal is not configured to include Canister data, some columns that are retrieved from the Canisters are not populated with data in the session list. See "Tuning Performance" on page 58.

For IBM Tealeaf cxReveal session list templates, the following columns may be added:

Column Name
Description

`Canister Name`
Name of the Canister where the original session is stored.
- Active Sessions - `STC_<MachineName>_YYYYMMDD`
- Completed Sessions - `LSSN_<MachineName>_YYYYMMDD`

where:
`<MachineName>` corresponds to the name of the machine hosting the Canister.
`<YYYYMMDD>` corresponds to the date stamp when the session was recorded.

Note: The IBM Tealeaf cxReveal database does not contain actual sessions. It contains references to sessions that may be stored in different Canisters in the Tealeaf environment.

Canister Server
Server hosting the Canister where the original session is stored.

Note: The IBM Tealeaf cxReveal database does not contain actual sessions. It contains references to sessions that may be stored in different Canisters in the Tealeaf environment.

First Use
Timestamp of the first session attribute entry in the IBM Tealeaf cxReveal database for the listed session

Last Use
Timestamp of the most recent session attribute entry or update in the IBM Tealeaf cxReveal database for the listed session

Session ID
Internal Canister session identifier

Session List Index
The index of the session in its Canister. This value is not typically of use to users.

Configure Session Attribute Data Capture

After the session attributes have been specified, you may configure the system to capture the session attributes and insert them into the IBM Tealeaf cxReveal database.

Capture of session attributes is managed through the Attribute Indexing session agent. This session agent must be deployed into a dedicated pipeline on a dedicated machine. This machine must be configured to be the recipient of event data forwarded through the Event Bus of Processing Servers in the Tealeaf environment.

- Tealeaf supports the deployment of multiple IBM Tealeaf cxReveal Servers to manage higher volumes of traffic.

Configuration details on the hosting machine and the pipeline are included in the documentation for the session agent.

Managing cxReveal Sessions

IBM Tealeaf cxReveal manages sessions independently of IBM Tealeaf cxImpact. This section describes how the IBM Tealeaf cxReveal capture pipeline and IBM Tealeaf cxReveal database manage sessions.

Managing session closes

Note: IBM Tealeaf cxReveal assumes that each valid session is closed using a Session Close event. You should verify that your Tealeaf solution is configured to use defined Session Close events and to send them to the IBM Tealeaf cxReveal system through the Tealeaf Event Bus.

After a session has been closed:

- If the Attribute Indexing session agent receives additional hits for the session, the session agent attempts to update them in the session.

cxReveal session timeouts

By default, IBM Tealeaf cxReveal is configured to timeout sessions if no update has been made within the last 60 minutes. If one hour has elapsed, the session is timed out.

Note: Beginning in Release 8.4.1, IBM Tealeaf cxReveal sessions that time out are not deleted.

In IBM Tealeaf cxReveal, each valid session should be closed by a Session Close event. If the Session Close event is not seen before the session timeout is triggered, IBM Tealeaf cxReveal closes the session.

- The timeout setting is specified using the `Search Database Session Timeout (minutes)` setting in the Portal Management page.

cxReveal search timeouts

When a IBM Tealeaf cxReveal database search is executed, the search is timed out if results are not returned within 60 seconds, by default. Depending on the performance of your network and databases, you may wish to adjust this setting.

The timeout setting is specified using the `Search Database Search Timeout (seconds)` setting in the Portal Management page.

Discarding sessions

If the IBM Tealeaf cxReveal pipeline receives a Session Discard event from the Tealeaf Event Bus, the session is deleted and removed from the database.

Note: The IBM Tealeaf cxReveal pipeline and Attribute Indexing session agent must receive a Session Discard event in order to discard a session.

The configured event must be marked for delivery to the Event Bus. If no Session Discard event is sent, the session is not discarded until after it has timed out. During the interval, other actions may occur to alter the session data in the IBM Tealeaf cxReveal database.

Through the Event Bus, these events are inserted in the `[CEP]` section of the request with the following information:

```
DiscardedSession=true
```

See "Tealeaf Event Bus" in the *IBM Tealeaf cxConnect for Data Analysis Administration Manual*.

cxReveal pipeline shutdown

If the IBM Tealeaf cxReveal pipeline or its Attribute Indexing session agent shuts down or crashes, when the system restarts, all open sessions with a last timestamp past timeout are deleted immediately or upon the following hour's check.

- This deletion happens regardless of whether during the downtime an actual Closed event was received.
- Open sessions that have not timed out yet are processed as normal as more hits come in.

Session removal

Sessions are retained in individual tables for each day. A day's session data is retained in the database for 30 days, after which the data is deleted.

This length of time is defined by the parameter `Search Database Session Attribute Tables - Days Retain`.

Logging

Logging of IBM Tealeaf cxReveal database searches can be enabled through the Portal Management page, where you may also configure the number of days to retain logs.

- `Search Database Log - Days Retain`
- `Log Search Database Searches`
- See "cxReveal Settings" in the *IBM Tealeaf cxReveal Administration Manual*.

Logs are available for download from each IBM Tealeaf cxReveal server through the Portal Management page.

Statistics

Statistics are tabulated for the IBM Tealeaf cxReveal search database and reported in the Portal.

Testing

After you have configured the session agent, pipeline, and Portal objects, you may test the capture and database population of session attributes by performing a search of them.

Troubleshooting

For more information on troubleshooting, see "Troubleshooting - cxReveal" in the *IBM Tealeaf Troubleshooting Guide*.

Tuning Performance

By default, when matches are found for session attribute searches, the Portal also queries the Canisters where the matching sessions are stored for additional session information. This information includes the list of events, browser information, domain location, and other useful information about the visitor and the session.

Depending on the number of users in your environment and other performance factors, this additional querying of the Canister may significantly impact performance of session search and session retrieval.

Note: For optimal search performance, specify a narrow date range when defining your search terms.

Optionally, you may disable this additional querying of the Canisters. When disabled, the returned search results contain only the information that's stored in the IBM Tealeaf cxReveal database. These fields include the available columns for IBM Tealeaf cxReveal search templates, as well as sufficient information to locate and replay the session stored in the Canister.

Note: If you disable querying of the Canisters and your IBM Tealeaf cxReveal session list templates are configured to display some Canister information, those columns in the displayed list are blank.

The setting to disable is `Use Canister Data for Database Search Results`.

Diagnostics Resources

You can use the following Portal resources to review status and health information on the IBM Tealeaf cxReveal session agent, pipeline, and database.

Feature
Description

Portal Application Information Report
Review build number and current size and allocation of IBM Tealeaf cxReveal database.

DecoupleEx Status Report
Review health and status data on the IBM Tealeaf cxReveal Server.

Database Filegroup Size Report
Review more detailed information on the size of filegroups in the TL_SEARCH database.

Portal Management page
Review configuration information for Search Server embedded in IBM Tealeaf cxReveal Server. Execute commands and acquire logs from the server.

Attribute Indexing Session Agent

The Attribute Indexing session agent can be deployed to retrieve session attribute information from Tealeaf event data and to insert that content into the IBM Tealeaf cxReveal database (`TL_SEARCH`).

- This session agent is deployed in a Windows pipeline that receives event data through the Tealeaf Event Bus enabled and configured on each Processing Server in the environment.

  Note: The Tealeaf Event Bus is a component of cxConnect for Data Analysis, a separately licensable component of the Tealeaf CX platform. please contact your IBM Tealeaf representative.

Available through IBM Tealeaf cxReveal, the IBM Tealeaf cxReveal database enables Tealeaf users to quickly locate Tealeaf sessions in any state of capture and processing by searching for session attributes. Session attributes may be specified as soon as the first hit is evaluated in the Windows pipeline. For example, the value for the login identifier is typically set to populate the `SessionAttribute00` attribute as soon as the visitor logs into the web application. When the first session attribute is detected by the session agent, a new record for the session is inserted into the IBM Tealeaf cxReveal database.

Note: The cxReveal database is a component of cxReveal, a separately licensable component of the Tealeaf CX platform. please contact your IBM Tealeaf representative.

This database record can be immediately queried and retrieved through Portal search by IBM Tealeaf cxReveal users, which enables them to quickly locate visitor sessions as needed.

Since these visitor records are stored in a single SQL Server database, search and retrieval of visitor information is very fast.

Note: The deployment of multiple IBM Tealeaf cxReveal servers is supported for higher volume web applications.

Pre-Requisites

Note: This section describes how to configure the IBM Tealeaf cxReveal server and pipeline for capture of session attributes. To enable the end-to-end solution for session attribute capture, search, and replay, additional configuration is required in the Portal. Before you begin, you should review the other configuration steps.

1. **IBM Tealeaf cxImpact:** The attribute indexing session agent is available through IBM Tealeaf cxImpact.
2. **IBM Tealeaf cxConnect for Data Analysis:** The capture of session attribute information from each Canister requires the use of the Tealeaf Event Bus to send events to the designated pipeline for capture.
3. **IBM Tealeaf cxReveal:** The IBM Tealeaf cxReveal database is a component of IBM Tealeaf cxReveal, a separately licensable product of the IBM Tealeaf CX system.
   - IBM Tealeaf cxReveal requires a separate installation on each IBM Tealeaf cxReveal server.
   - Enabling session attribute search requires additional configuration.

Note: The Attribute Indexing session agent should not be deployed in a Windows pipeline where other processing occurs. This session agent requires a dedicated Windows pipeline and a separate IBM Tealeaf cxReveal server.

Installing cxReveal

Before you begin, the Tealeaf Transport Service and the IBM Tealeaf cxReveal database must be installed on each IBM Tealeaf cxReveal server.

The IBM Tealeaf cxReveal database may be installed separately on the same system using the Tealeaf Database Manager.

Configuration Workflow

The basic architecture for attribute indexing pipelines is to split content from one of your existing Windows pipelines and to send the content to a Windows pipeline on the IBM Tealeaf cxReveal Server for insertion of session attribute information into the IBM Tealeaf cxReveal database.

1. If you have not done so already, you must install the Processing Server and IBM Tealeaf cxReveal database on each dedicated IBM Tealeaf cxReveal Server. Multiple deployment models are supported for the IBM TealeafcxReveal database.
2. As part of the install process, a default pipeline is created. It contains the minimum session agents to capture and insert session attribute information into the database, including the Attribute Indexing session agent.
3. Configure the parameters of the Attribute Indexing session agent. See "Configuring Attribute Indexing Session Agent" on page 63.

4. In the main Windows pipelines that are sending hits through the Event Bus to the Processing Server managing attribute indexing, enable the Event Bus and configure the Event Bus.
5. After the Event Bus has been enabled and tested locally, the Event Bus pipeline must be configured to send Tealeaf events to the destination system.
6. Repeat the Event Bus configuration for each Processing Server to send events to the IBM Tealeaf cxReveal Servers.
7. After you have completed the configuration steps, you may test capture as soon as data has arrived at the pipeline.

Attribute Indexing processing pipeline

In the following sections, you can review the minimum pipeline configuration required to enable capture of session attributes. These are minimum requirements. The pipeline required for your Tealeaf environment may vary.

Note: The IBM Tealeaf cxReveal Installer configures the following default pipeline for use. If this pipeline meets your needs, additional configuration may not be required. You may wish to review the available parameters for the session agent.

The pipeline that is used to capture session attributes and insert them into the IBM Tealeaf cxReveal database requires the following minimum configuration:

```
DataDrop > DecoupleEx > SessionRouter > AttrIndexer > Null
```

Tealeaf recommends using the `DecoupleEx` pipeline session agent. `DecoupleEx` enables spooling of hits into the pipeline during overloaded conditions, such as when a broad search is being executed. When the `DecoupleEx` session agent is deployed, statistical information on the pipeline performance can be surfaced in the Portal.

Avoid using `Decouple` in the IBM TealeafcxReveal Search pipeline.

Note: The Attribute Indexing session agent must be configured so that its downstream session agent is the Null session agent.

Note: In almost all environments, Tealeaf Privacy rules are not necessary for this pipeline, as the terminating session agent is the `Null` session agent. If privacy is required to meet your security requirements, you may insert the Privacy session agent or Extended Privacy session agent after the `Decouple` session agent in the above pipeline.

Adding the Session Agent

Session agents can be added through the Pipeline Editor in TMS.

Configuring the Event Bus

The Tealeaf Event Bus enables the delivery of Tealeaf events to other systems or pipelines for offline analysis or use.

Note: The Tealeaf Event Bus is a component of cxConnect for Data Analysis, a separately licensable component of the Tealeaf CX platform. please contact your IBM Tealeaf representative.

Before you deploy the session agent, you should complete the following configuration tasks on each Processing Server in the environment sending event data for capture by the session agent:

1. Enable the Event Bus.

   Note: When enabling the Event Bus, do not include the response data. Since the Attribute Indexing session agent collects session-level information only, including individual response data consumes unnecessary bandwidth to transfer to the IBM Tealeaf cxReveal server.
2. Enable the Event Bus pipeline local to the Processing Server hosting it.
3. Configure the Event Bus pipeline.
4. Test the Event Bus pipeline by writing event data to a Tealeaf archive.

These steps are documented in the Event Bus documentation.

Minimum Event Bus Pipeline

After the Event Bus has been enabled, configured, and tested on each Processing Server submitting event data for capture, you can configure the Event Bus pipelines to forward data to the machine dedicated to capturing session attribute data.

1. From the Portal menu, select **Tealeaf** > **TMS**.
2. Click the WorldView tab.
3. From the Server drop-down, select one of the Processing Servers sending data to the session attribute machine.
4. Click the Canister node.
5. Click **Event Bus configuration**. In the Config Actions pane, click **View/Edit**.
6. The Event Bus pipeline is displayed in the Pipeline Editor.
7. During testing, you may have deployed one of the following session agents as the last one in the pipeline (the **terminal session agent**).
8. When you are ready to send data to the session attribute capture machine, replace the terminal session agent with the Socket session agent.
9. Drag and drop the terminal session agent in the pipeline to the Available Session Agents pane.
10. Drag and drop the Socket session agent from the Available Session Agents pane to be the last session agent in the pipeline.
11. The pipeline should look something like the following:

    ```
    Decouple > <other_agents> > Socket
    ```

    where:
    `<other_agents>` - may be zero or more session agents, depending on your Event Bus requirements.
12. Configure the Socket session agent.
13. Save your changes.
14. Push the changes to other servers.
15. Repeat these configuration changes to each Event Bus on the Processing Servers in your environment.

Configuring the Socket Session Agent

This session agent terminates all Event Bus pipelines that send event data for further processing by another pipeline.

The following settings need to be configured for the Event Bus pipeline for each Processing Server delivering events.

Setting Description

Port Set this value to the port used by the pipeline that is capturing attribute information on the IBM Tealeaf cxReveal server.

Server Set this value to the hostname of the IBM Tealeaf cxReveal server.

Configuring Attribute Indexing Session Agent

After you have configured the pipeline to capture session attribute information, you must configure the Attribute Indexing session agent in the pipeline.

This session agent scans content for user-defined session attributes. When new attribute values or changes to attribute values are detected, the session agent uses the available session information to attempt to locate the session record in the IBM Tealeaf cxReveal database.

- If there is no match with an existing record, a new session record is inserted into the database.

Settings

When the Windows pipeline is installed, the session agent configuration items are specified for you.

Note: Do not change values for the available configuration settings other than the settings listed below.

Setting Description

LogLevel
Set the log level for the session agent.

RolloverHour
Define the hour when a new database table is created to store the captured session attributes for the day.

MasterPipeline
One pipeline must be configured as the master pipeline for maintenance purposes. If you are using only one pipeline to capture session attributes, set this value to `true`.

Logging

The Attribute Indexing session agent can be configured to generate logging information.

To enable logging:

1. In the Attribute Indexing session agent, you must configure the `LogLevel` value to one of the following values:
   - `status`
   - `info`
   - `warn`
   - `error` (default)
   - `debug`

   Note: Use the `debug` level only for troubleshooting specific issues. When the issue has been resolved, reset to a lower level.
2. Save changes.

Log files are written to the main Tealeaf log directory.

The following log is written from the session agent.

```
<Tealeaf_install_directory>\Logs\
TLSessionAgentAttrIndex_PipelineId_YYYYMMDD.log
```

where:

- `PipelineId` - identifies the port number for the pipeline. Typically, this value is `1966` or `1967`.
- `YYYYDDMM` - date stamp

This log receives status information from the session agent once per minute.

```
<Tealeaf_install_directory>\Logs\
RevealStatus_YYYYMMDD.log
```

where:

- `YYYYDDMM` - date stamp

Log fields:

The following fields are displayed in the `RevealStatus` log file, which are updated once per minute.

- Log files are updated from the master pipeline only on each IBM Tealeaf cxReveal server.

Field(s)
: **Description**

`RevealStatus`
: Current status of the connection to the IBM Tealeaf cxReveal database (`up` or `down`)

`RevealDownReason`
: If status is `down`, this field indicates the reason.

`SessionsUpdated`
: Number of Tealeaf sessions that were updated in the past minute with new or changed session attributes.

`HitsSkippedAttributesUnchanged`
: Number of hits that were skipped in the past minute because there were no new or updated session attributes.

`SearchAttribute1 - SearchAttribute5`
: The session attributes that are currently configured to be searchable.
  - IBM Tealeaf cxReveal supports up to five searchable session attributes. The attributes available for IBM Tealeaf cxReveal search are defined through the Event Manager.

`TrackedAttribute1 - TrackedAttribute32`
: The session attributes that are currently configured to be tracked.
  - IBM Tealeaf cxReveal supports tracking in the database of up to 32 session attributes. The attributes available for IBM Tealeaf cxReveal tracking are defined through the Event Manager.

Downloading logs:

Log files may be downloaded through the Portal Management page.

1. In the Portal menu, select **Tealeaf** > **Portal Management**.

2. Click the Manage Servers link.
3. Select the server hosting the Attribute Indexing session agent and IBM Tealeaf cxReveal capture pipeline.
4. Click the Tealeaf Logs icon in the toolbar.
5. In the Filter By drop-down, select `SA Session Attribute`. Click **Refresh**.
6. Click the link of the log file you wish to download. Log filenames should be in the following format:

   `TLSessionAgentAttrIndex_YYYYMMDD.log`

Testing Capture of Attributes

This section describes how to test the capturing of session attributes.

Check the Pipeline

Through TMS, you can verify that the pipeline is operating in the Pipeline Status tab.

1. From the Portal menu, select **Tealeaf** > **TMS**.
2. Click the **Pipeline Status** tab.
3. From the **Server** menu, select the server where the session attributes are evaluated.
4. Verify that the proper pipeline is selected in the Pipelines panel.
5. In the upper-right pane, you can review the character and hit counts passed through each session agent.

   Non-zero values indicate that the pipeline is capturing content.

Verify Search

The best way to test capture of session attributes is to perform a search through the Portal using the IBM Tealeaf cxReveal template for Active sessions.

Note: To enable search, additional configuration is required. See "Configuring Session Attribute Search" in the *IBM Tealeaf cxReveal Administration Manual*.

- If sessions are returned, then the session agent is capturing session attributes and creating valid records in the IBM Tealeaf cxReveal database.
- See "cxReveal - Searching Sessions by Session Attribute" in the *IBM Tealeaf cxReveal User Manual*.

Tealeaf Session Agents

- Attribute Indexing Session Agent
- Canister Session Agent
- Cookie Parser Session Agent
- Data Drop Session Agent
- Data Parser Session Agent
- Decouple Session Agent
- Extended Decoupler Session Agent
- Extended Privacy Session Agent
- Health-Based Routing (HBR) Session Agent
- Inflate Session Agent
- JSON Mobile Parser Session Agent
- Managed Code Session Agent
- Null Session Agent

- Privacy Session Agent
- Real-Time Monitoring and Alert (RTA) Session Agent
- Response Tags to Request Session Agent
- RTA Split Session Agent
- Sessioning Session Agent
- Session Router Session Agent
- Socket Session Agent
- Statistics Logger Session Agent
- Tealeaf Reference Session Agent
- Tealeaf Sessioning Session Agent
- TimeGrades Session Agent
- TLI Session Agent
- URL Decode Session Agent

Configuring Search Templates

Through the Portal, you can define search templates and session list templates.

- **Search templates** specify the set of fields and default properties that are available to users when the search template is selected.
- **Session list templates** are lists of attribute columns used on the session list grid for search results.

To define search templates, select **Configure** > **Search Templates** in the Portal menu.

Search Templates

A search template defines the scope of the criteria that can be used to search and are an effective means of limiting for users and groups the searchable fields that they can search.

By developing and deploying well-designed templates, the Tealeaf administrator can focus searches on the terms of interest to specific groups, prevent access to sensitive fields, and limit the number of returned results for better search performance.

Search templates are available for selection in the session search and visitor search pages.

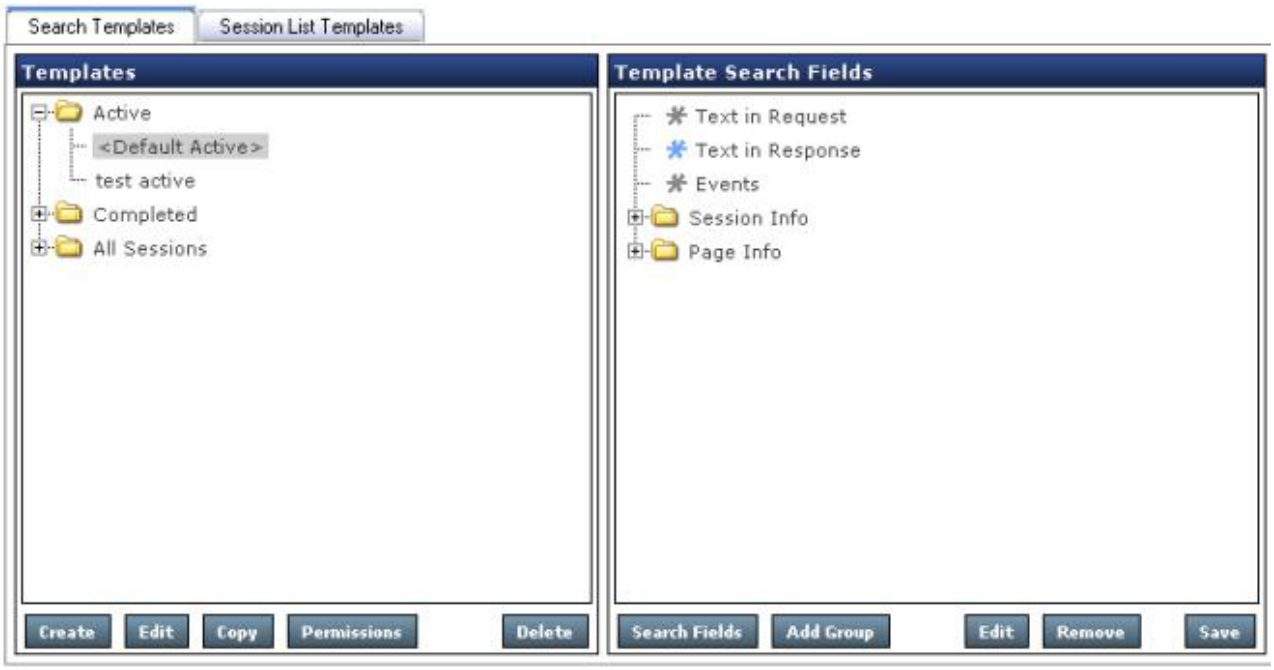


Figure 5. Search Templates

Search templates control the fields that are available for a user to use in a search, as well as the default attributes of the search such as date range and servers to search. On the Search Templates pane of the Search Template Configuration page, there is a list of defined templates, categorized by search type. The three search types correspond to a set of searchable sessions:

- **Active** searches the currently active sessions.
- **Completed** searches completed and indexed sessions
- **All Sessions** searches across both active and completed sessions.

As the templates are incompatible across search types, each template has a list of search fields available to it.

Configuring a Search Template

Note: After you have created a new search template, you should immediately set the permissions to enable viewing of it. Otherwise, it does not appear among your available search templates. To edit permissions, select the template and click **Permissions**. See “Permissions” on page 70.

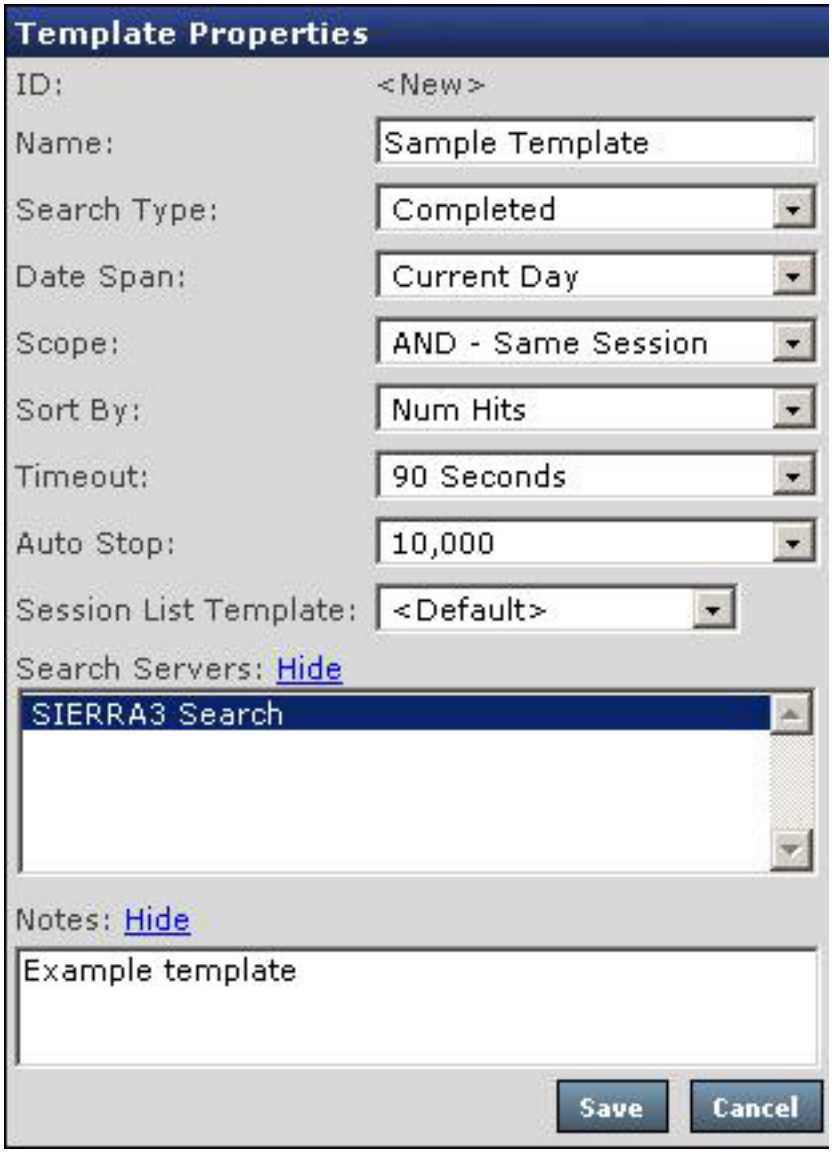


Figure 6. Template Properties

The available properties for a search template are listed below. Each property on the template is a default setting, which the user may alter at the time of the search, if enabled by permissions:

Property
: **Description**

Name
: The name of the template.

Search Type
: The type of sessions that can be searched using the template: `Active`, `Completed`, or `All Sessions`.

Date Span
: The date range over which the search template covers.

Scope
: How selected fields are applied to the search:

  - `AND - Same Session` - The search returns sessions that match all specified fields.

- `AND - Same Page` - The search returns sessions that have individual pages matching all fields.
- `OR - Any Session` - The search returns sessions that match any of the fields.

Sort By
How the matching sessions are sorted.

Timeout
The maximum amount of time allotted for the search.

Auto Stop
The search automatically stops after opening the number of sessions defined by this property.

Session List Template
The Session List template in which to display the results returned when a search is executed with this search template.

Search Servers
The search servers to select for searching by default.

Notes If specified, the notes appear as an informational textbox above the search fields on the search page.

- To insert a newline in the Notes® textbox, enter `\n`. These text strings appear as-is in the Notes textbox. You can press `ENTER` in the textbox to make the notes more legible.

Copying Templates

You can copy a search template and modify it to create your own search template. To copy a template, click **Copy** beneath the list of templates.

If the Duplicate Search Fields option is selected, new copies of the search fields are created with the new search template. Otherwise, the new template uses the same fields as the original. Because search fields and templates are independent, multiple templates can use the same search field.

Permissions

You can specify the user groups that can access the selected template for searches.

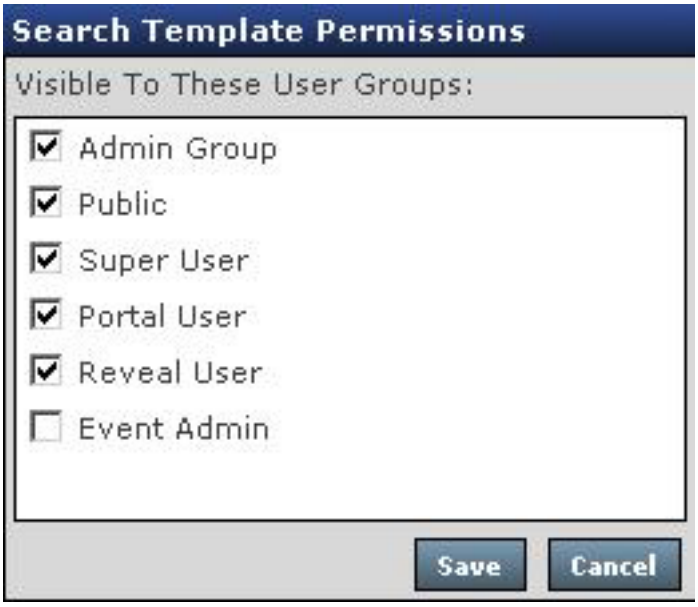


Figure 7. Search Template Permissions

Deleting Templates

To delete a template to which you have access, click **Delete**. Any search fields used by the template are not deleted.

Template Search Fields

Search fields are defined in a search and populated with values to generate a specific search query. Individual search fields can be configured and assigned to search templates

- To add a new search field group, click **Add Group**. Enter a name and select **Add**. In the Search Template Fields panel, a new folder appears with the group name as its label.
- To edit a template search field, select it and click **Edit**.
- Search fields may be labeled as Available, Active, or Required. For more information, please review the Search Field Modes panel.
- To change the mode for a search field, click the icon next to it and select the new mode.

  Note: A search template can display up to six recommended or required fields. These fields appear when the template is first loaded. If additional recommended or required fields are specified in the template, only the first six such fields are displayed when the template is initially displayed to the user.
- To remove a field, select it and click **Remove**.
- To save the search template, click **Save**.

Configuring a Search Field

To add a search field to the template, click **Search Fields** in the Template Search Fields pane to display the currently available search fields:

Note: If a field does not appear in the list, it may be incompatible with the current template and is therefore hidden. Incompatible fields use search keywords that cannot be used with the current template. To display all fields, select the **Show Incompatible Fields** checkbox. Incompatible fields cannot be added to the current template.

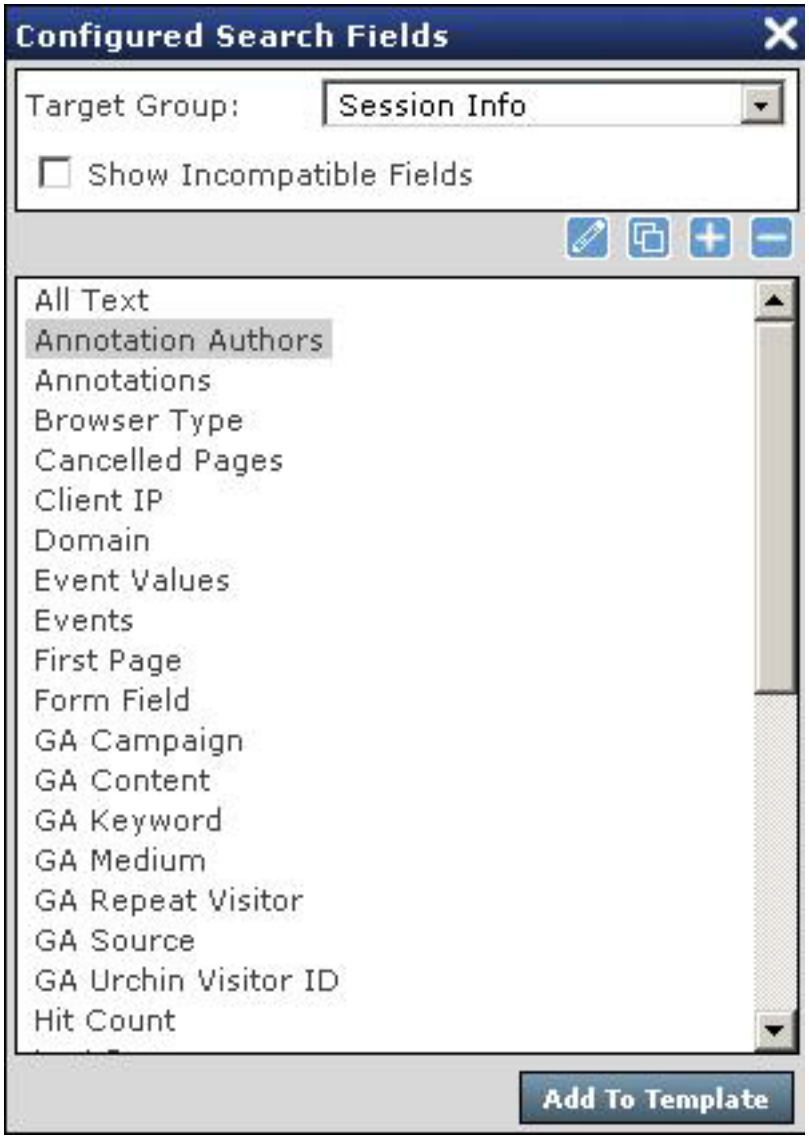


Figure 8. Configured Search Fields

- To add a field to a field group, select the group from the Target Group drop-down.
- To add a field to the current search template, select it and click **Add To Template**.
- To edit a search field, click the Edit icon.
- To create a new search field, click the + icon.

Available Search Fields

The following search fields are available in the default templates for Active and Completed sessions.

Note: Depending on the type of search template, some search fields may not be available. For All Sessions search templates, you may add search fields only if they are applicable to both active and completed search templates.

Note: Fields that have been encrypted using privacy rules in the IBM Tealeaf CX Passive Capture Application or Windows pipelines cannot be decrypted in the Portal.

- These encrypted fields can be decrypted **only** during replay.
- As an alternative, you can leave the configured fields in unencrypted state in the session data and then define privacy rules specifically to be applied during session replay, permitting the display of the unencrypted data in the Portal, as needed.

Text:

For completed sessions, you can search for text strings contained in requests, responses, and other derived data. The text strings can include different search patterns to further restrict the search.

Note: Free text searches can be expensive to complete. These search fields should be included only where other indexed search field options are not available.

Text String Type
Description

All Text
When searching completed sessions, you can search for a text string in any part of the session data, including the request, the response, and any derived data such as events or custom user-defined fields. This data is indexed using the dtSearch software program, so any of the search options provided by dtSearch are available. The following patterns are supported:

- `*` Wild character. For example, `C*` matches both `CC` and `CAT`.
- `{ }` Matches any character contained within the bracket.
- `^` Represents the beginning of the line. For example, `^T` searches for any line starting with a `T`.
- `$` Represents the end of the line. For example, `error$` returns any line ending with `error`.
- `\` indicates to emphasize the subsequent character in the search.

Text in Request
You can search for a text string in the request portion of a hit in completed sessions. The above patterns are supported.

Text in Response
You can search for a text string in the response portion of a hit in completed sessions. The above patterns are supported.

Events:

During processing of sessions, Tealeaf events are triggered based on visitor session data. The data derived from events is stored with the actual hit and session information and may be searched like captured data.

- With IBM Tealeaf cxResults, these events are also stored in the Visitor database where they can be searched for dates beyond the life of the replayable sessions.

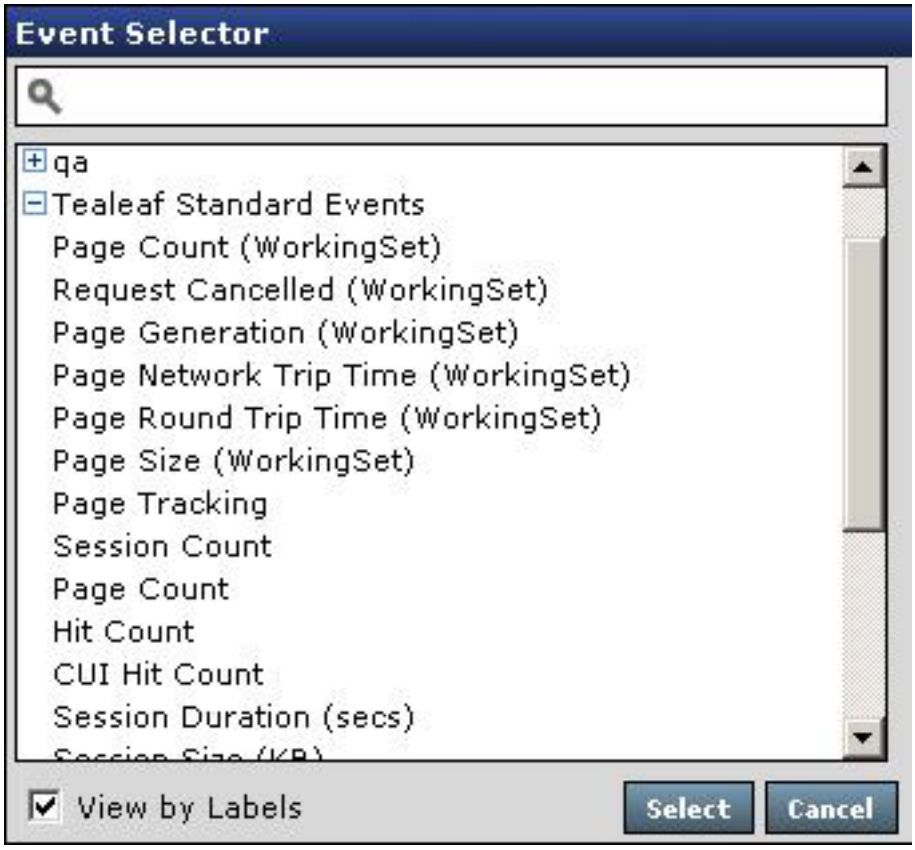


Figure 9. Event Selector

Events may be associated with one or more dimensions, which enable the reporting of event data across multiple axes.

- Users of the search template may select the dimension or dimensions associated with the event to search as part of the query.
- Dimensions are created in the Tealeaf Event Manager.

Input Type for events

Search fields for events may be configured to use one of the following input types:

Input Types
Description

`Event Selector`
Template user may select any accessible event.

`Pulldown`
Template user may select an event from a pulldown menu that you populate. You may also specify default values.

`Radio buttons`
Template user may select an event by clicking a radio button from a set that you define. You may also specify default values.

Event Values:

You may specify fields that enable search for specific event values. Users may select the event and value for which to search or use the default ones you specify.

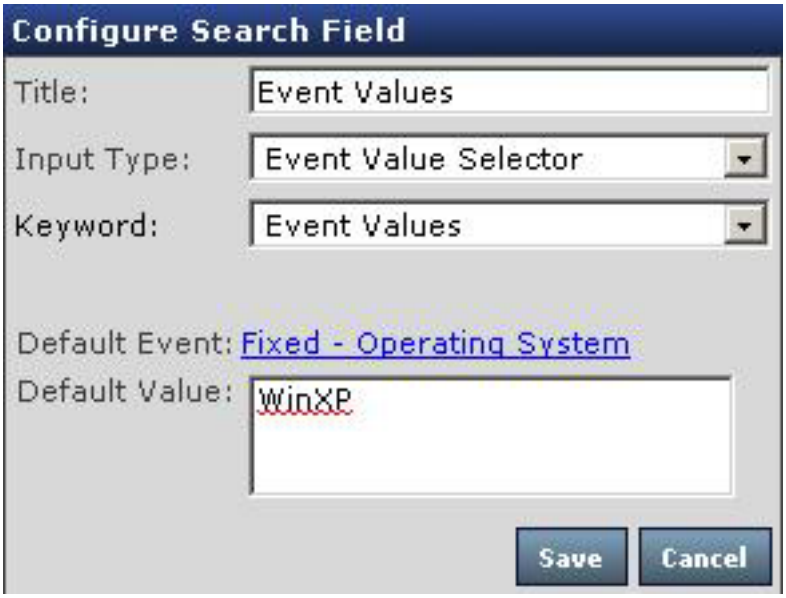


Figure 10. Configuring Event Value Search Field

Field Description

`Default Event`
Click the link to select the event to use as the default event for this search field.

`Default Value`
Enter the default value with which to populate the search term. No data validation of the default value is performed.

Event values may be specified using different kinds of input types.

Values for events are stored in a data entity called a **fact** in the request buffer.

Session Info:

As Tealeaf builds and processes sessions, it derives data from the captured information that is applicable to the entire session.

Page Info:

As Tealeaf creates and processes hits, it derives data from the captured information that applies to the entire hit or page.

- For this grouping, the list of searchable fields for active sessions is completely different from completed sessions.
- The active page fields are aggregated into reports contained within dashboards.

cxReveal Fields:

Tealeaf enables IBM Tealeaf cxReveal users to search for sessions by session attribute. These session attributes are stored in a separate high-performance database, where they are accessible for search as soon as they are identified in the session data.

Note: Searching for session attributes is a component of cxReveal, a separately licensable component of the Tealeaf CX platform. please contact your IBM Tealeaf representative.

When configuring search templates of IBM Tealeaf cxReveal type, you may select from the available session attributes that have been marked to be searchable and tracked in the IBM Tealeaf cxReveal database.

Note: When adding a IBM Tealeaf cxReveal search field to a search template, you should verify that it is specified with a valid session attribute that is collecting data. Open the search field definition to verify that the session attribute is not listed as `Unknown Attribute`. Such search fields can be added to a search, yet they return zero sessions every time. Each IBM Tealeaf cxReveal search field should be verified independent of other IBM Tealeaf cxReveal search fields.

- You may define the session attributes that are marked for searching and tracking in the database in the Event Manager.

Note: These search keywords are compatible with the IBM Tealeaf cxReveal Active, Completed, and All Sessions search templates only, as these templates perform queries of the IBM Tealeaf cxReveal database.

- These search template fields cannot be used in IBM Tealeaf cxImpact search templates.

Creating a New Search Field

To create a new search field, click + in the Configured Search Fields dialog.

Search field properties:

Creating or editing a search field opens the Configure Search Field dialog:

Figure 11. Configure Search Field

You can modify the following properties for your new or edited search field:

Property
Description

Title The title of the search field.

Input Type

The types of input the search field can use. This value affects how the search field is displayed and the users who are allowed to use it.

- **Free Text** - The user is presented with a textbox and can freely enter text. The textbox is populated with the contents of the Default Value property.
- **Pulldown** - The user is presented with a drop-down of specified values from which to select. The default selected item is specified by the Default Value property. The items in the drop-down are controlled by the Values property.
  - You can specify empty values, if desired. If the user selects the label corresponding to an empty value, the field is not submitted as part of the search.
- **Radio Button** - The user is presented with a list of radio buttons of specified values from which to select. The default selected item is specified by the Default Value property. The items in the drop-down are controlled by the Values property.
  - You can specify empty values, if desired. If the user selects the label corresponding to an empty value, the field is not submitted as part of the search.
- **Prebuilt Query** - You can enter a pre-configured query in one of the following textboxes:
  - `Query` - If the search field is selected to be `included` in the search by a user of the template, this query is used in the search.
  - `Inverse` - If the search field is selected to be `not included` in the search by a user of the template, this query is used in the search. If this query is not specified and the user selects `not included`, a negated version of the `Query` value is used.
- **Form Field Input** - This value is only used with the Form Field keyword. When it is used, the user is presented with two textboxes: one for a field and one for a value. The textboxes are populated with the values of the Field and Value properties, respectively.
  - **Hide Field Input** - If this is enabled, the field input for a form field is hidden, and the default is used. This feature can be used to restrict a form field search to a specific field and to permit only an input for the value.
- **Event Selector** - This Input Type value is only used with the Events keyword. When it is used, it provides the user with the Event Selector popup when the field is selected.

Keyword

The actual search keyword to use when this field is selected.

MD5 Hashing

For search fields that match against text, this option hashes the value the user inputs before generating the query. This feature allows a user to enter plain text to match against an indexed field that has been MD5 hashed to clean or obfuscate data.

Default Value

The default value to use when the search field is selected. This value changes depending on the Input Type.

- For event and event value fields, you may select the default event for the field.

Values

When the Pulldown and Radio Button Input Types are selected, the Values property is enabled and contains a list of the displayed values from which the user can choose.

- To add a value, click **Add**.
- To edit a value, click **Edit**.
- To remove a value, click **Remove**. You can reorder values by using the Up and Down buttons.
- **Label** - The visible text for this option.
- **Value** - The actual value for the option that is used to generate the search query.
- **Events** - Displays the Event Selector to populate the Label and Value with an event.

Selecting keywords:

The available items correspond to search keywords used when building the actual query. For example `Event` corresponds to `tltstsuniqueid` in Completed Search Templates.

Some keywords are not compatible with the current template type. When you select an incompatible keyword, the **Keyword:** marker indicates that there is an issue. Mouse over the Question Mark (?) icon to review the issue, as indicated below:

Figure 12. Issue with Keyword

If you have an incompatible keyword, you cannot save the search field until the issue is corrected.

Selecting the following keywords populates special items in the Input Type list:

Keyword
Input Type item

Event Event selector

Form Field
Form Field Input (two text inputs, form field and value)

AppData
AppData Input (same as form field input)

Search Field Modes

A search field added to a template has a mode: Available, Recommended, and Required.

- To select the mode for a field, click the icon next to the search field.

Mode Description

`Available`
The field is not displayed but can be used in a search. This is the default mode of a search field that is added to a template.

`Active` The field is displayed and populated with a pre-configured default value. An active field can be removed from a search. An empty active field will not be included in a search.

`Required`
The field is displayed and populated with a pre-configured default value. A required field cannot be removed from a search. A required field must contain a value or valid selection when the search is performed.

Adding Session Attributes

A *session attribute*is a session-level storage container for data that can be populated by an event. Tealeaf supports the use of up to 64 session attributes.

From pre-Release 8.0 versions of Tealeaf, the LoginID and UserDef 1-4 user-defined values have been migrated to Session Attribute 0 and Session Attributes 1-4, respectively.

Note: Depending on the trigger of its populating event, a session attribute may not be available in a search template, even if you configure it. For example, if the session attribute is populated by an event triggered by End of Session, it is possible to add the session attribute as a field to an Active search template, even though the field is not yet populated for active sessions.

Complete the following steps to add a session attribute to a search template:

1. Create the session attribute, including populating it with values generated by an event.
2. In the Search Templates page, select the template in which to create the session attribute search field.
3. Click **Search Fields**. The Configured Search Fields dialog appears.
4. Select the Target Group from the drop-down.
   - If your search template does not include an appropriate group, close the Configured Search Fields dialog and click **Add Group**.
5. Before a search field is available for use in search templates, you must create it. Click the + icon.
   a. The Configure Search Field dialog appears.
   b. Specify a title for the field, which appears in the search template and in the search configuration page.
   c. From the Keyword drop-down, select `Session Attribute`.
   d. The Attribute selector is displayed in the Configure Search Field dialog. Click **<Select an attribute**.
   e. Select the session attribute in the displayed list. Click **Select**.
   f. Configure the other properties as needed.
   g. Click **Save**.

6. The selected session attribute is added to the search template under the selected group.
7. To save changes to the server, click **Save**.

You may also add the session attribute as a column in the session list template.

Adding Client User Interface Fields

Tealeaf UI Capture enables the capture of user interface events that occur in the visitor's browser. When deployed as part of your web application, UI Capture tracks user interface events on the client and submits XML-based requests to the web server, which enables those events to be captured and processed by Tealeaf.

Note: IBM Tealeaf CX UI Capture for AJAX requires the Extended Edition of the IBM Tealeaf CX platform. please contact your IBM Tealeaf representative.

When UI Capture is deployed and configured for your web application, the following values are inserted as variables in the `[appdata]` section of the request of last viewable page before the UI event. These variables map to search keywords that you can add to your search templates.

- These values are identified in the Windows pipeline and posted into the `[appdata]` section by the Tealeaf Reference session agent.

Table 5. Adding Client User Interface Fields

Request Variable	Corresponding Search Keyword	Description
`TLT_CUI_URL`	`Client UI URL`	URL as reported from the client user interface
`TLT_CUI_APPLICATION_NAME`	`Client UI Application`	Name of the application as reported from the client user interface.

The above values may differ from the standard reference values that are inserted into the request by the Tealeaf Reference session agent, as the client user interface may contain an entire application with unique URLs within a single HTML page.

Session List Templates

Session list templates are used to configure the appearance and the data of the list of sessions returned from a search. The session list templates allow control of the displayed fields of session data, how they should be treated, and other information such as the server metrics.

Search templates can be set to use specific session list templates, or a template can be selected at the time of the search. Much like the search templates, session list templates have a set of properties, but they can also reference session list columns, which are assigned to the templates.

Figure 13. Session List Templates

- To create a new session list template, click **Create**.
- To edit an existing session list template, select it and click **Edit**.
- To copy a session list template, select it and click **Copy**.
- To assign the session list template to one or more search templates, select it and click **Assignments**.
- To delete a session list template, select it and click **Delete**.

Configuring a Session List Template

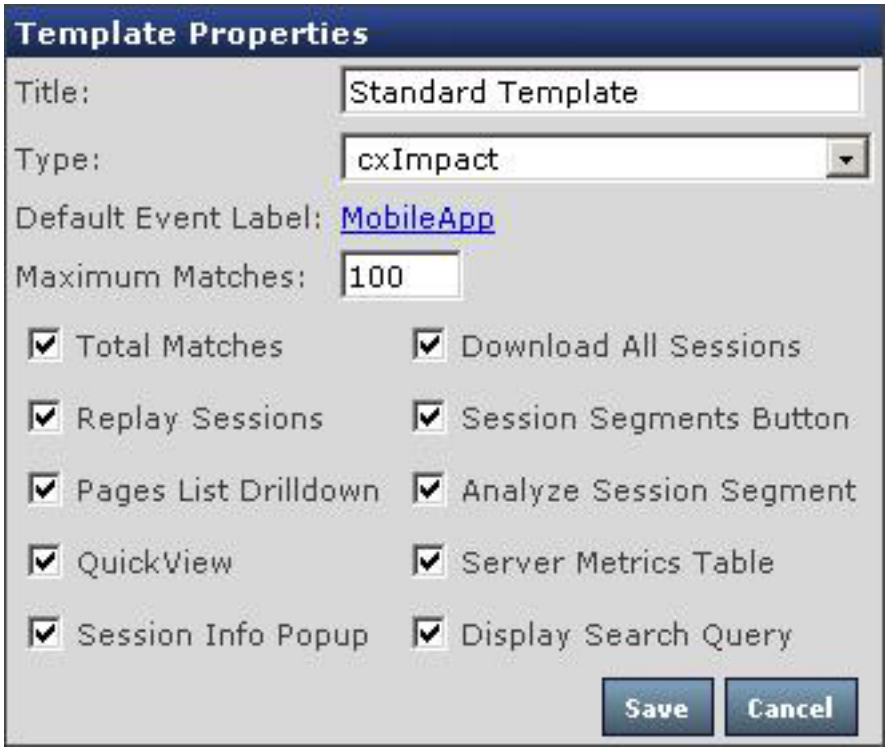


Figure 14. Template Properties Session list templates have the following properties:

Property
Description

Title The name of the template.

Type The type of search template:

- `cxImpact` - standard search template. Use this one in almost all cases.
- `cxReveal` - IBM Tealeaf cxReveal search templates can be used to specify searches by session attribute of the IBM Tealeaf cxReveal database.

  Note: The ability to search by session attribute requires IBM Tealeaf cxReveal, an installation of the IBM Tealeaf cxReveal database, and additional configuration.

Default Event Label
Select the event label whose events should be displayed by default in the QuickView page.

- Users may select a different event label as needed in the QuickView page.

Maximum Matches
The maximum number of sessions to return from a search. This setting has no effect on how many sessions are found or examined; it only determines the number of sessions available to the user. For performance reasons, you cannot set this value above 10000.

- This setting should be configured in conjunction with other search limit settings.

Total Matches
Displays the total number of matching sessions.

Replay Sessions
Enables the replay of sessions from the session list.

Pages List Drilldown
Allows examining the pages of a returned session within the Portal.

QuickView
Enable the user to open the QuickView page, where the events that fired on each page can be reviewed.

Session Info Popup
Allows the user to get a quick list of session attributes from the session list.

Download All Sessions
Displays the Download All button, which allows users with RTV installed to open all sessions found in a search.

Session Segments Button
Displays the Manage Segments button in the session list, which allows users to access the Manage Segments page.

Note: When this button is enabled in session list templates accessible to IBM Tealeaf cxReveal users, it is not displayed in the session list because IBM Tealeaf cxReveal users cannot create session segments. IBM Tealeaf cxReveal administrators may be able to create session segments through the Manage Session Segments page.

Analyze Session Segment
Displays the Analyze Segment button, which can be click to analyze the session segment of a search directly from the Session List.

Note: When this button is enabled in session list templates accessible to IBM Tealeaf cxReveal users, it is not displayed in the session list because IBM Tealeaf cxReveal users cannot create session segments. IBM Tealeaf cxReveal administrators may be able to create session segments through the Manage Session Segments page.

Server Metrics Table
Displays the table listing the servers that were searched with elapsed time and number of returned sessions.

Display Search Query
Allows the query used in the search to appear on the Search Results page.

Configuring Maximum Session Display Limits:

When configuring the number of sessions that are displayed in search results, several Portal settings may affect the result.

- **Search Database Max Sessions Returned** - (IBM Tealeaf cxReveal database searches only) This parameter defines the maximum number of sessions that can be returned from a search of the IBM Tealeaf cxReveal database. For IBM Tealeaf cxReveal database searches, other session display limits may be applied to further limit the number of sessions displayed; the number of displayed search results never exceeds this number of database searches.
- **Maximum Matches** - In the specified session list template, you can configure the maximum number of sessions that can possibly be displayed in the template.
  - Regardless of the values of other settings, the `Maximum Matches` setting defines the limit to be displayed in a session list.
  - For performance reasons, this value cannot exceed `10000`.

- **Session Segment Max Sessions Limit** - In the Portal Management page, you can specify the maximum number of sessions that any newly generated segment can contain.
- **Live Max Results Limit or Completed Max Results Limit** - In the Portal Management page, these settings determine the number of sessions that can be displayed for any active or complete session search, regardless of the template setting.
- **Auto Stop Limit** - This setting defines the number of sessions that Search Server inspects per Canister before returning results. From an individual Canister, Search Server does not inspect more sessions for matches than the number configured for this setting. By default, this value is set to `10000`.

The maximum number of sessions displayed in a search result is the minimum of the applicable settings. The Live or Completed limit is applicable depending on the type of search and only in cases where the search generates a new result set.

- Results can be returned into existing result sets, where the maximum limits for the existing result are applied, instead of the current Portal settings.

Limits for searches executed from IBM Tealeaf CX RealiTea Viewer can be configured in the RTV Search setup dialog.

Copying a Session List Template

To copy a template, select it from the list of templates and click the Copy button beneath the list.

The Duplicate Columns option controls whether or not copies are also made of the columns associated with the template. Because columns and templates are independent, multiple templates can use the same column.

- If the Duplicate Columns option is selected, new copies of the columns are created along with the new template. Otherwise, the new template uses the same columns as the original.

Assigning a Session List Template

To assign a session list template to one or more search templates, select one or more search templates and click the Assignments button beneath the list of templates. The selected search templates are updated to use the current session list template by default.

Selecting a Session List Template

In the Search page, you can select a session list template to use.

If IBM Tealeaf cxResults is licensed, you can select session list templates in the Visitor Search page.

For completed session searches, you can choose to display them in a different session list template.

Example Session List Templates

This section explains the use of session list templates to filter your search results.

Session counts template:

In some cases, you may only be interested in the number of instances that the search criteria occurred. You can configure a session list template to return only the counts of found results.

- When searching for session counts only, the display of the results is faster; the search itself takes the same length of time.
- Even if you are only returning the session counts in the session list, the list of returned sessions can still be exported through the Portal.

To configure:

1. Click the Session List Templates tab.
2. Create or select the session list template to use.
3. For the Maximum Matches value, enter `0`.
4. Select the Total Matches checkbox.
5. Select the Server Metrics Table checkbox.
6. The other checkboxes are irrelevant to this template.
7. Click **Save**.
   - To make this the default session list template for users or groups, you must assign the session list template.

Session List Columns

Session list columns are used on session list templates, and they control what is displayed in the list of matching sessions. The columns can be used to display session attributes, compare session attributes to specified values, or flag for the existence of specific events or other attributes.

Adding a Session List Column to a Template

Select a Session List template, and the template's columns are listed in the Template Search Columns pane. To select configured columns, click the All Columns button. To add a column to the template, select a column and click the Add To Template button. Columns in the Session List Columns pane can be reordered using drag and drop.

Configuring a Session List Column

On the Search Template Configuration page, the **All Columns** button in the Template Search Columns pane displays a popup of the currently available columns. Use the **New** button to start creating a new column, or select an existing column and use the **Edit** button.

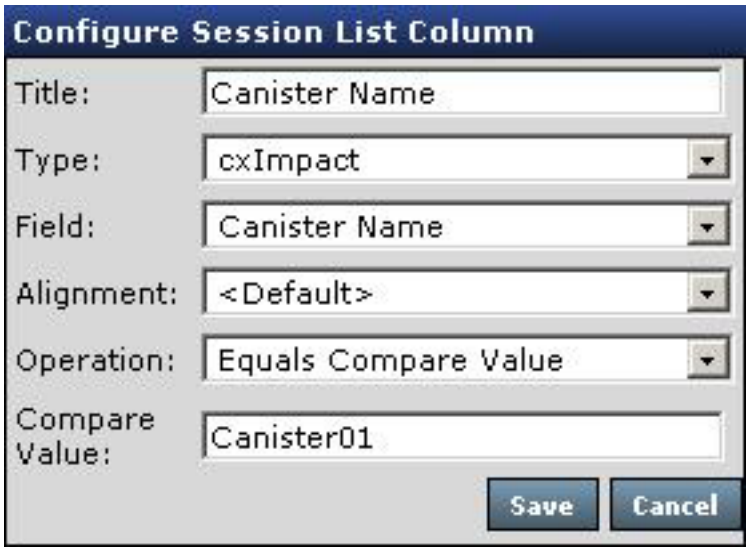


Figure 15. Configure Session List Column

Session list template columns have the following properties:

Property
Description

`Title` The title of the column, displayed on the session list.

`Type` The type of session list template column:

- `cxImpact` - standard search template column. Use this one in almost all cases.
- `cxReveal` - IBM Tealeaf cxReveal search templates can be used to specify searches by session attribute of the IBM Tealeaf cxReveal database.

  Note: The ability to search by session attribute requires IBM Tealeaf cxReveal, an installation of the IBM Tealeaf cxReveal database, and additional configuration.

`Field` The session field that the column uses for data.

Note: The list of available fields depends on whether standard or extended indexing is in use.

`Alignment`
Optionally, you can override the default alignment setting for the specific value type to be applied to the session list column by making a selection in the drop-down.

`Operation`
How the data is displayed or used:

- **<Display Field Value>** - The field's value is displayed directly.
- **Equals Compare Value** - A checkmark is displayed if the value of the Field exactly matches the Compare Value.
- **Less Than Compare Value** - For numeric fields, a checkmark is displayed if the value of the Field is less than the Compare Value.
- **Greater Than Compare Value** - For numeric fields, a checkmark is displayed if the value of the Field is greater than the Compare Value.

Compare Value
The value against which to compare the Field value.

Events To List
The set of possible events to list for the Event List Subset field. The listed events are the intersection of the events of each session and the supplied list for the column. To add or remove events, click the Add or Remove buttons above the list.

Configuring an Event Column in a Session List Template:
You can configure the event icons displayed in a session list column. When an event list subset column is added to a session list template, you can provide parameters on the events for which you can search.

- In the session list, users can review details on the event.

1. In the Session List Templates tab, select the template to edit or create a new one.
2. Select the event column to edit, or create a new one.

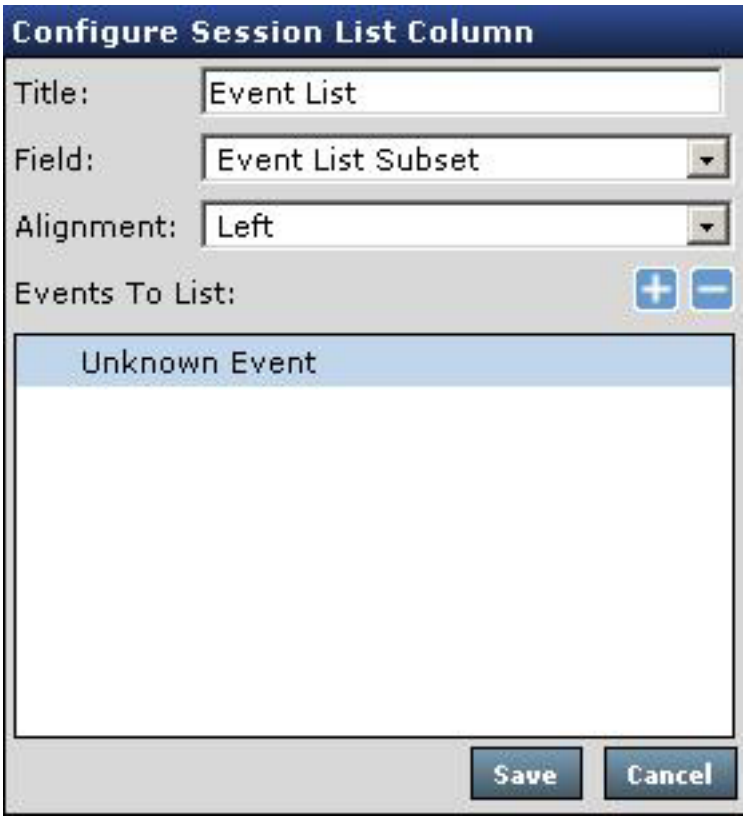


Figure 16. Configure Session List Column

3. From the Field drop-down, select `Event List Subset`.
4. Use the + and - buttons to add or remove events from the list.
5. Save the column.
6. Add the column to the template, if necessary.
7. Save the template.

Populating a session list template column with a session attribute:

Tealeaf enables the creation and tracking of up to 64 session-level parameters into distinct session attributes. If desired, you can populate session list templates with session attributes, which is useful for exporting session data.

Note: Columns populated by session attributes are sorted as text values.

Complete the following steps to add a session attribute to a session list template:

1. Create the session attribute, including populating it with values generated by an event. See "TEM Session Attributes Tab" in the *IBM Tealeaf Event Manager Manual*.
2. In the Search Templates page, select the session list template in which to create the session attribute search field.
3. Click **All Columns**. The Configured Session List Columns dialog appears.
4. Before a session list column is available for use in search templates, you must create it. Click the + icon.
   a. The Configure Session List Column dialog appears.
   b. Specify a title for the column, which appears in the session list and its template.
   c. From the Field drop-down, select `Session Attribute Value`.
   d. The Attribute selector is displayed in the Configure Search Column dialog. Click **<Select an attribute**.
   e. Select the session attribute in the displayed list. Click **Select**.
   f. Select the desired Operation from the drop-down.
      - To export the values of the session attribute, select `<Display Field Value>`.
   g. Click **Save**.
5. The selected session attribute is added to the list of available columns.
6. To add the new column to your template, select it and click **Add to Template**.
7. To save changes to the server, click **Save**.

You may also add session attributes as fields to your search template.

Building Searches via Encoded URL

This section describes how you can build an encoded URL to execute a specified search.

Note: The best method for building searches via encoded URL is to create and execute the search through the Tealeaf Portal. When the desired results are displayed, you may step back to the search page and click the Link to Search button in the search toolbar to display the URL that creates the search. Users who execute this search via URL may still be required to authenticate through the Tealeaf Portal.

Overview

All parameters must be URL-encoded.

Required Arguments: template

Argument
Value

template
The ID of the template to be loaded. The user must have permission to view this template. The IDs for templates can be found on the search template config page with the **Edit** button for templates.

fieldX Either the active search keyword or the archive search keyword (e.g. request) for a search field. The first matching search field will be selected from the template and used. Knowledge of acceptable keywords is required, so we have to provide a master list somewhere.

opX The operator value for the field

valueAX
The first value to populate the field with. Text inputs only use valueA - others such as form fields, or numerical fields with the `between` operator can use valueB

valueBX
The second value to populate the field with

For `field`, `op`, `valueA` and `valueB`, the `X` is a numerical index starting at `0`. For example, `field0=request`, `op0=1`, `valueA0=tealeaf` will find a search field in the template that uses the `request` keyword, set the operator to `includes`, and populate it with the text `tealeaf`.

Required Arguments: template

Argument
Value

datespan
The numeric constant representing the dates to search on.

startdate
If datespan is set to -1, this is the ISO-format date for the beginning date of the range (e.g. 2007-01-02 is Jan 02, 2007)

enddate
If datespan is set to -1, this is the ISO-format date for the end date of the range (e.g. 2007-01-02 is Jan 02, 2007)

starttime
If datespan is set to -1, this is the 6-digit, 24-hour time for the beginning of the range, in HHMMss format (e.g. 003015 is 00:30:15 or 12:30:15 AM)

endtime
If datespan is set to -1, this is the 6-digit, 24-hour time for the end of the range, in HHMMss format (e.g. 233059 is 23:30:59 or 11:30:59 PM)

scope The scope of the search.

sort How the results will be sorted

timeout
The maximum allotted time for an archive search, in seconds. The search will be stopped once this amount of time has elapsed, but more time may be required to collate the sessions found.

autostop
Specifies the limit at which an archive search will be stopped. When X matching sessions are found, the search is stopped.

dosearch

If set to 1, the search will be performed once all the fields have been processed and populated. This mode takes you to the search builder, so the search results will appear as a second breadcrumb. This allows a search to be performed, but the user will still be able to go back and tweak the constraints to refine the search.

Operator Values

The following values may be included in the opX parameter:

Value	Description
1	Includes/contains (active/archive)
-1	NOT includes/contains
2	Equal (numerical)
-2	NOT equal
3	Between (numerical)
-3	NOT between
4	Greater than
5	Less than

Chapter 7. cxReveal database

The IBM Tealeaf cxReveal (TL_SEARCH) database stores session attribute data and other session-related data in the database as soon as it is captured. This immediate capture allows rapid access to sessions for IBM Tealeaf cxReveal users and fast response times when querying through the Portal for sessions.

In the database, data is stored in individual tables for each day.

The IBM Tealeaf cxReveal database requires the following:

- IBM Tealeaf cxReveal license
- IBM Tealeaf cxConnect for Data Analysis license (for Event Bus)

Filegroups

- **PRIMARY** - The default filegroup for the database. Used by SQL Server for record keeping and management in the database.
- **LOOKUP** - Contains all non-search Tealeaf data.
- **INDEX** - Contains the non-clustered indexes for the data in the LOOKUP filegroup.
- **SESSION** - Contains the searchable session data.
- **SESSION_INDEX** - The non-clustered indexes on the searchable data.

Sizing

The size of the database correlates directly to the number of sessions per day that are processed by Tealeaf. For each session, one row is created and stored while the session is retained in the source Canister.

- For most customers, this database should range from 50 GB to 300 GB.

Reports

Tealeaf captures statistical information from this database, which is available through the Portal.

© Copyright IBM Corp. 1999, 2014

Chapter 8. IBM Tealeaf documentation and help

IBM Tealeaf provides documentation and help for users, developers, and administrators.

Viewing product documentation

All IBM Tealeaf product documentation is available at the following website:

https://tealeaf.support.ibmcloud.com/

Use the information in the following table to view the product documentation for IBM Tealeaf:

Table 6. Getting help

To view...	**Do this...**
Product documentation	On the IBM Tealeaf portal, go to **?** > **Product Documentation**.
Help for a page on the IBM Tealeaf Portal	On the IBM Tealeaf portal, go to **?** > **Help for This Page**.
Help for IBM Tealeaf CX PCA	On the IBM Tealeaf CX PCA web interface, select **Guide** to access the *IBM Tealeaf CX PCA Manual*.

Available documents for IBM Tealeaf products

Use the following table to view a list of available documents for all IBM Tealeaf products:

Table 7. Available documentation for IBM Tealeaf products

IBM Tealeaf products	**Available documents**
IBM Tealeaf CX	• *IBM Tealeaf Customer Experience Overview Guide* • *IBM Tealeaf CX Client Framework Data Integration Guide* • *IBM Tealeaf CX Configuration Manual* • *IBM Tealeaf CX Cookie Injector Manual* • *IBM Tealeaf CX Databases Guide* • *IBM Tealeaf CX Event Manager Manual* • *IBM Tealeaf CX Glossary* • *IBM Tealeaf CX Installation Manual* • *IBM Tealeaf CX PCA Manual* • *IBM Tealeaf CX PCA Release Notes*

© Copyright IBM Corp. 1999, 2014

Table 7. Available documentation for IBM Tealeaf products (continued)

IBM Tealeaf products	Available documents
IBM Tealeaf CX	• *IBM Tealeaf CX RealiTea Viewer Client Side Capture Manual* • *IBM Tealeaf CX RealiTea Viewer User Manual* • *IBM Tealeaf CX Release Notes* • *IBM Tealeaf CX Release Upgrade Manual* • *IBM Tealeaf CX Support Troubleshooting FAQ* • *IBM Tealeaf CX Troubleshooting Guide* • *IBM Tealeaf CX UI Capture j2 Guide* • *IBM Tealeaf CX UI Capture j2 Release Notes*
IBM Tealeaf cxImpact	• *IBM Tealeaf cxImpact Administration Manual* • *IBM Tealeaf cxImpact User Manual* • *IBM Tealeaf cxImpact Reporting Guide*
IBM Tealeaf cxConnect	• *IBM Tealeaf cxConnect for Data Analysis Administration Manual* • *IBM Tealeaf cxConnect for Voice of Customer Administration Manual* • *IBM Tealeaf cxConnect for Web Analytics Administration Manual*
IBM Tealeaf cxOverstat	*IBM Tealeaf cxOverstat User Manual*
IBM Tealeaf cxReveal	• *IBM Tealeaf cxReveal Administration Manual* • *IBM Tealeaf cxReveal API Guide* • *IBM Tealeaf cxReveal User Manual*
IBM Tealeaf cxVerify	*IBM Tealeaf cxVerify Administration Manual*
IBM Tealeaf cxView	*IBM Tealeaf cxView User Manual*
IBM Tealeaf CX Mobile	• *IBM Tealeaf CX Mobile Android Logging Framework Guide* • *IBM Tealeaf Android Logging Framework Release Notes* • *IBM Tealeaf CX Mobile Administration Manual* • *IBM Tealeaf CX Mobile User Manual* • *IBM Tealeaf CX Mobile iOS Logging Framework Guide* • *IBM Tealeaf iOS Logging Framework Release Notes*

Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

Intellectual Property Licensing
Legal and Intellectual Property Law
IBM Japan, Ltd.
19-21, Nihonbashi-Hakozakicho, Chuo-ku
Tokyo 103-8510, Japan

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

© Copyright IBM Corp. 1999, 2014

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM Bay Area Lab
1001 E Hillsdale Boulevard
Foster City, California 94404
U.S.A.

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs. The sample

programs are provided "AS IS", without warranty of any kind. IBM shall not be liable for any damages arising out of your use of the sample programs.

Trademarks

IBM, the IBM logo, and ibm.com® are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at “Copyright and trademark information” at www.ibm.com/legal/copytrade.shtml.

Privacy Policy Considerations

IBM Software products, including software as a service solutions, ("Software Offerings") may use cookies or other technologies to collect product usage information, to help improve the end user experience, to tailor interactions with the end user or for other purposes. A cookie is a piece of data that a web site can send to your browser, which may then be stored on your computer as a tag that identifies your computer. In many cases, no personal information is collected by these cookies. If a Software Offering you are using enables you to collect personal information through cookies and similar technologies, we inform you about the specifics below.

Depending upon the configurations deployed, this Software Offering may use session and persistent cookies that collect each user's user name, and other personal information for purposes of session management, enhanced user usability, or other usage tracking or functional purposes. These cookies can be disabled, but disabling them will also eliminate the functionality they enable.

Various jurisdictions regulate the collection of personal information through cookies and similar technologies. If the configurations deployed for this Software Offering provide you as customer the ability to collect personal information from end users via cookies and other technologies, you should seek your own legal advice about any laws applicable to such data collection, including any requirements for providing notice and consent where appropriate.

IBM requires that Clients (1) provide a clear and conspicuous link to Customer's website terms of use (e.g. privacy policy) which includes a link to IBM's and Client's data collection and use practices, (2) notify that cookies and clear gifs/web beacons are being placed on the visitor's computer by IBM on the Client's behalf along with an explanation of the purpose of such technology, and (3) to the extent required by law, obtain consent from website visitors prior to the placement of cookies and clear gifs/web beacons placed by Client or IBM on Client's behalf on website visitor's devices

For more information about the use of various technologies, including cookies, for these purposes, See IBM's Online Privacy Statement at: http://www.ibm.com/privacy/details/us/en section entitled "Cookies, Web Beacons and Other Technologies."

Printed in USA